

# Communications Equipment Catalog



## HAM RADIO OUTLET

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**FTDX9000**



**FT-2000**



**FT-450**

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# ICOM HTS - FUN ON THE GO!



**D-STAR optional**

## IC-V82 / IC-U82

2M @ 7W (V82)/70CM @ 5W (U82) • RX: 136-174MHz/420-450MHz\*\*  
• 200 Alphanumeric Memories • Optional D-STAR Features Include Callsign Calling, Text Message, Position Exchange\*, and More!



## IC-T90A

2M/70CM @ 5W • Wide Band RX: 0.495-999.99MHz\*\* • 500 Alphanumeric Memories • 1300 mAh Li-ion Battery • CTCSS & DTCSS Encode/Decode with Tone Scan



## IC-T7H SPORT

2M/70CM @ 6W (13.8VDC) • RX: 118-174MHz & 400-470MHz\*\* • 70 Memory Channels • CTCSS Encode/Decode with Tone Scan • Auto Repeater Function • AA Alkaline Case



## IC-P7A

2M @ 1.5W; 70CM @ 1W • Wide Band RX: 0.495-999.99MHz\*\* • 1000 Alphanumeric Memories • Up to 20 Hour Li-ion Battery • Rapid Charger Included • Super Compact Size



**D-STAR optional**

## IC-91A

**D-STAR ready**

## IC-91AD

2M/70CM @ 5W • Wide Band RX: 0.495-999.99MHz\*\* • 1304 Alphanumeric Memories • V/V, U/U, V/U (Dual Watch) • Long-Lasting Li-ion Battery • IPX4 Weather Resistant • Jump in on D-STAR and let the fun grow!

## NEW IC-V85

2M @ 7 Watts • RX: 136-174MHz\*  
• 107 Alphanumeric Memories • CTCSS and DTCSS Tone Squelch • DTMF Decode Operation with Optional UT-108 • Compact Body • IPX4 Weather Resistant



For the love of **ham radio** outlet.

  
**ICOM**



## PRYME® Radio Products ADI Radios

### Mobile



**2 Meters**  
**AR-147 PLUS**  
**\$149.95**  
HRO Price

Our most advanced radio has all the features expected in a modern mobile transceiver including AM air receive, direct frequency entry, and 81 memory channels. Includes both CTCSS and digital coded squelch.

- Extended receive 118 - 171 MHz.
- Three power settings, 60, 10, and 5 watts.
- 80 memory channels plus a call channel.
- CTCSS / DCS encode and decode built-in.
- Auto repeat offset.
- 9 DTMF AutoDial memories plus built-in redialer for autopatch.
- Dual frequency watch.
- User programable time out timer.
- Programable band and memory scan modes.
- DTMF paging.
- Direct frequency entry using the multifunction DTMF microphone.
- Auto power off.
- Frequency or channel display.
- PC programable with option software.

### HF Receiver

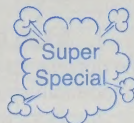


**NRD-545**  
**\$1799.95**  
HRO Price

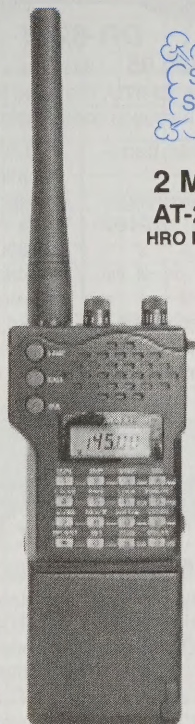


The NRD-545 HF receiver provides clear, distortion free sound through the application of 40-bit digital signal processing (DSP). 13 types of circuits are handled by the DSP unit including all mode detection, IF filter, pass band shift, noise reduction, beat canceller, noise blanker, notch filter, AGC, BFO, RF Gain, squelch, tone control and s-meter. Features a variable tuning system, high sensitivity, wide dynamic range RTTY demodulation, large LCD display, remote control by a personal computer. The NRD-545 covers .01 to 30 MHz and 30 MHz to 2000 MHz with the optional board. Covers all modes with outstanding sensitivity.

### Handheld



**2 Meters**  
**AT-201-HP**  
HRO Price - Call



- The AT-201 transmits 144-148 MHz; receives 130-179 MHz.
- Backlit key pad.
- 40 memories are softsectored as 20 memories in each of 2 banks. Memories store any transmit offset and CTCSS tone.
- Memory group covers groups of 10 or 40 memories.
- Automatic repeater for quick operation. Enter the desired frequency and + or -.
- Full range or 1 MHz scanning is available.
- Display shows either channel or frequency.
- Can be cloned using a hardware key.
- Compatible with all AT-200 / 400 accessories.

### Ham Radio Outlet Accepts



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## 2m / 440 MHz HTs

### DJ-596TMKII

**\$229.95** – HRO Discount Price

VHF + UHF operations from a high output, easily operated HT. Features an enhanced TXCO allowing for  $\pm 2.3$ ppm frequency stability. NiMH battery, 100 memories, CTCSS + DCS encode / decode. Optional digital voice communications. Alphanumeric channel labels, keyboard frequency input, theft alarm, backlit keys and display, scan modes, narrow FM mode. CAP compliant (application pending).

### Credit Card Size

### DJ-C7T

**\$199.95** – HRO Price

This compact 2m / 440 MHz dual band has standard or non-standard splits, AM air band receive, CTCSS encode / decode, 200 memories, volume / squelch control, key lock, auto-power OFF, mic / earphone / DC jack.

## Single Band HTs

### DV-V17T

**2 m – \$129.95**

### DJ-V47T

**440 MHz – \$199.95**

HRO Prices

These HT's are compact full-powered FM HT's that are submersible 3ft for 30 minutes. There are perfect for outdoor activities. Power out for 2m is 5W and 4.5W for UHF with RBP-65 Ni-MH pack. Direct frequency input from keypad. 200 memories plus one call channel. 39 CTCSS encode+decode settings. Digital Coded Squelch.

### Pick a Band – Any Band

### DJ-196T

**2 m – \$149.95**

### DJ-296T

**222 MHz – \$189.95**

### DJ-496T

**440 MHz – \$199.95**

HRO Prices

These HT's have alphanumeric display, back-lit keypads, 5 W out with standard EBP-48N battery, CTCSS encode / decode, DCS and 4 different tone bursts, theft alarm. The 2m and 440 MHz versions have 41 memories; the 222 MHz model: 160 memories plus call channel.

## Dual-Band Mobiles



### DR-620T

**\$339.95** – HRO Discount Price

With the optional EJ-47U, this radio has advanced 10F3 digital mode with speech compression technology.

- 2m / 440 MHz transceiver.
- Extended receive range: 87.5-174 and 335-480 MHz.
- Remote front panel w/ optional EDS-9.
- 200 memory channels.
- Set parameters, enter frequencies via the mike.
- D-SUB9 connector and optional EJ-50U TNC support digi-peat mode for APRS tracking and 9600 bps packet.
- Scans: VFO, memory, programmed, CTCSS and DCS.
- Transmit power 50 / 35 / 10 / 1 W.



### DR-635T

**\$369.95** – HRO Discount Price

The DX-635T is a mobile / base VHF+UHF transceiver plus an expanded range receiver.

- Output on VHF is 50 / 25 / 5 W and 35 / 20 / 5 W on UHF.
- 200 memories.
- Cross-band repeater functions.
- Large, 6 character alphanumeric display with selectable color illumination.
- Removable control head for remote mounting.

- Internal duplexer.
- CTCSS and DCS encode/decode plus four different tone bursts.
- CTCSS tone and SCS scan.
- Optional 1200 and 9600 bps packet operation (EJ-50U).
- Programmable VFO and memory scan modes.
- Aircraft band reception.
- Receive frequencies: 87.5-107.995, 108-173.995, 335-479.995 MHz.

## Single Band Mobiles

### DR-135TMKIII

**2 m – \$169.95** – HRO Price

2 meter FM and receive Airband (AM). Ignition key power control, theft alarm, 7 place alphanumeric display, front panel data input, optional internal packet module can be used with APRS (TM), rear panel serial port connection. 100 memories, 10 autodial memories, and more.



### DR-235T

**220 MHz – \$249.95**

### DR-435TMKIII

**440 MHz – \$299.95**

HRO Prices

Features a unique multifunction backlit microphone with direct frequency input. These 220 MHz and 440 MHz models can accept optional EJ-41U internal TNC or EJ-47U digital voice module. The MKII TXCO supports a specification of  $\pm 2.5$  ppm frequency stability.

## HF / 6 Meter



### DR-MO6TH

**6 meter FM**

**\$249.95** – HRO Discount Price

Work DX over several hundred miles with the many forms of propagation on this 6 meters ground wave, direct wave, sporadic-E, F2 reflection and back scatters, just to name a few. Covers the 6m band (50-54 MHz) with 20 watts high and 1 watt low output. This rig has 100 memories, a CTCSS encoder, and EMS-11 DTMF microphone (US only). Receiver has 12dB SINAD sensitivity.

### DX-70TH

**HF / 6m – \$699.95**

HRO Discount Price

All-mode, General coverage receiver, 100 watt output from 1.8-30 MHz & 6 m, 100 memories with 10 memory group scans, Detachable control head, Dual VFO, CTCSS for 6/10 m, Full QSK and auto CW break-in, Built-in narrow band filter, RF preamplifier, speech processor, noise blanker, Size 2.25"(H) x 7"(W) x 9"(D).

## Receivers

### DJ-X30T

**\$199.95**

HRO Discount Price

Features include: Selectable keyboard system; compact size; remote control with optional EDS-12; triple conversion AM/NFM; double conversion WFM; 1000 memories; 5 scan modes; priority receive; 3 antenna modes; cable-clone; receives 100kHz to 1.29999GHz (cellular blocked).

### Small Size Handheld

### DJ-X7

**\$169.95**

HRO Discount Price

Features include: Credit card size, WFM, NFM, AM, covers 100 KHz - 1299.995 MHz (cellular blocked), help navigation, 1000 channels, downloadable software (optional cable required), 39-tone tone squelch, 3 different antenna modes (earphone, internal bar, external SMA), pager function.



# ACCESSORIES

## Handheld Accessories

MODEL	DESCRIPTION	C5	C7	X2	F1T- HP	G1T	G5	S40	S11 S41	V5	X2000 X10	162T D	162T	190T 280T 490T	190 191T 191T- HP	195T 196T 496T	560T A	580T	596	HRO Price
EBP-6	Mobile Bracket			*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	\$16.95
EBP-24N	Ni-Cd Battery (7.2V 1200 mAh)													*			*	*	\$78.95	
EBP-26N	Ni-Cd Battery (7.2V 700 mAh)													std			*	*	\$41.95	
EBP-28N	Ni-Cd Battery (12V 700 mAh)													*			*	*	\$68.95	
EBP-33N	Ni-Cd Battery (4.8V 650 mAh)							*			*				*				\$63.95	
EBP-34N	Ni-Cd Battery (4.8V 1200 mAh)							*			*				*				\$69.95	
EBP-36N	Ni-Cd Battery (9.6V 650 mAh)							*							*				\$67.95	
EBP-37N	Ni-Cd Battery (4.8V 700 mAh)							*							*				\$34.95	
EBP-45N	Ni-Cd Battery (6.0V 700 mAh)									*									\$47.95	
EBP-46N	Ni-Cd Battery (9.6V 600 mAh)									*							*		\$59.95	
EBP-51N	Ni-MH																*	*	\$37.95	
EBP-50N	High Capacity																*		\$23.95	
EBP-52N	Ni-MH Battery (3.6V 500 mAh)								*										\$37.95	
EBP-53N	Ni-MH Battery 6.0V 500 mAh)								*										\$45.95	
EBP-54N	Ni-MH Battery (3.6V 1500 mAh)								*										\$49.95	
EBP-58N	Ni-MH Battery (3.7V )		*																\$37.95	
EDC-16B	Filtered DC Cig. Cable	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	\$22.95	
EDC-36	Filtered DC Cig. Cable	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	\$24.95	
EDC-37	13.8 volt Power Cable	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	\$7.95	
EDC-43	Cigarette Lighter Cable	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	\$10.95	
EDC-45	Quick Charger			*	*	*	*			*	*	*	*	*	*	*	*	*	\$69.95	
EDC-49	Wall Charger													*			*	*	\$19.95	
EDC-60	Rapid Charger							*			*				*			*	\$78.95	
EDC-63	Wall Charger							*			*				*			*	\$19.95	
EDC-88	Quick Charger EBP-33N, 34N, 35N, 36N, 37N, 46N							*			*	*	*	*	*	*			\$53.95	
EDC-91	Quick Charger EBP-45N, 46N									*	*	*	*	*	*	*			\$53.95	
EDC-93	Wall Charger									*	*	*	*	*	*	*			\$23.95	
EDH-11	Dry Cell Case													*			*	*	\$12.95	
EDH-12	DC Jack Adaptor for ext. power													*			*	*	\$12.95	
EDH-16	Dry Cell Case						*	*	*	*	*	*	*	*	*	*	*	*	\$12.95	
EDH-27	Dry Cell Case / Charger			*											*				\$44.95	
EDH-28	DC Converter Cigar Cable			*															\$38.95	
EDH-29	Dry Cell Case									*	*	*	*	*	*	*	*	*	\$12.95	
EDH-31	Dry Cell Case							*	*	*	*	*	*	*	*	*	*	*	\$12.95	
EDH-32	Cigarette Lighter Cable		*																\$19.95	
EDS-7	2 Pin Mike Adaptor	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$9.95	
EJ-14U	50 Memory Channel Unit													*					\$19.95	
EJ-15U	200 Memory Channel Unit													*					\$29.95	
EJ-28U	CTCSS Decoder Unit														*				\$42.95	
EJ-43U	Digital Voice Board																	*	\$109.95	
EME-12	Headset w/ear hook VOX & PTT			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$69.95	
EME-16	Tie Pin Microphone	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$17.95	
EME-17	Earplug Headset	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$29.95	
EME-19	Earphone	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$13.95	
EME-24	Earphone/Microphone			*															\$39.95	
EME-25	Coil Cord earphone			*															\$14.95	
EMS-47	Speaker Mike (req EDS-7)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$24.95	
EMS-50	Round Speaker Mic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$63.95	
EMS-60	Speaker Microphone			*												*	*	*	\$41.95	
EMS-82	Speaker Microphone			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	\$48.95	
ESC-18	Leatherette Case EBP-24N													*	*	*	*	*	\$13.95	
ESC-19	Leatherette Case EBP-28N													*	*	*	*	*	\$18.95	
ESC-23	Soft Case (EBP-30N)					*													\$16.95	
ESC-24	Soft Case (EBP-31N/32N)					*													\$10.95	
ESC-27	Soft Case								*	*	*	*	*	*	*	*	*	*	\$15.95	
ESC-28	Soft Case (EBP-37N)							*	*	*	*	*	*	*	*	*	*	*	\$12.95	
ESC-29	Soft Case (EBP-33N)							*	*	*	*	*	*	*	*	*	*	*	\$12.95	
ESC-30	Soft Case (EBP-34N/35N/36N)							*	*	*	*	*	*	*	*	*	*	*	\$12.95	
ESC-34	Soft Case / Belt Pouch	*	*																\$13.95	
ESC-35	Soft Case black								*	*	*	*	*	*	*	*	*	*	\$12.95	
ESC-36	Soft Case black															*	*	*	\$12.95	
ESC-38	Soft Case black		*																\$14.95	

## Alinco Handheld Specifications

Model	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out **	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DJ-C7T	2m / 440 MHz	3.7-6VDC	320 mA	70 mA	300 mW †	200	50	2k	<15 µV	3.7	2.2	0.57	0.23
DJ-596MKII	2m / 440 MHz	6-16VDC	1.5 A	75 mA	5 W †	100	50	3k	<15 µV	4.89	2.2	1.58	0.82
DJ-296T	2m	13.8 VDC	1.2 A	280 mA	5 W	40	50	2k	<14 µV	4.88	2.25	1.57	0.83
DJ-296T	222-225 MHz	13.8 VDC	1.2 A	280 mA	5 W	160	50	2k	<14 µV	4.88	2.25	1.57	0.83
DJ-496T	430-450 MHz	13.8 VDC	1.4 A	280 mA	5 W	40	50	2k	<12 µV	4.88	2.25	1.57	0.83
DJ-S11T	144-148 MHz	4.5 VDC	250 mA	33 mA	340 mW	20	50	2k	<15 µV	3.93	2.16	1.1	0.41
DJ-S40T	420-449.995 MHz	13.8 VDC	600 mA	50 mA	1 W	100	50	2k	<14 µV	4	2.2	1.2	0.41
DJ-V17T	144-147.995MHz	7.2 VDC	1.4 A	250 mA	5 W	200	50	2k	<2 µV	4.33	2.28	1.43	0.61
DJ-V47T	420-449.995 MHz	7.2 VDC	1.7 A	250 mA	4.5 W	200	50	2k	<25 µV	4	2.2	1.2	0.61

\*\* Power output is determined by choice of battery pack. † at 13.8VDC \* 500mW with 6 VDC

## Alinco Mobile Specifications

Model	Primary Use	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DR-135TMKIII#	Mobile	2 m	13.8 VDC	11 A	400 mA	5/10/50 W	100	50	600	<16 µV	1.57	5.58	6.83	2.2
DR-235T	Mobile	222-225 MHz	13.8 VDC	8 A	400 mA	5/10/25 W	100	50	600	<16 µV	1.57	5.58	6.83	2.2
DR-435TMKIII#	Mobile	430-450 MHz	13.8 VDC	10 A	400 mA	5/10/35 W	101	50	600	<16 µV	1.57	5.58	6.83	2.2
DR-150TQ	Mobile	2 m Trans	13.8 VDC	10 A	600 mA	50 W	100	50	600	<16 µV	1.6	5.6	6.2	2
DR-635T	Mobile	2m/440 MHz	13.8 VDC	11 A	1.2 A	50 W/35 W	50	50	600	<16 µV	1.6	5.6	7	2.43
DR-620T	Mobile	2m/440 MHz	13.8 VDC	11 A	600 mA	50 W/35 W	200	50	2000	<14 µV	1.6	5.5	7.28	2.2
DR-M06TH	Mobile	50-54 MHz	13.8 VDC	3 A	800 mA	20 W/2 W	100	50	600	<16 µV	2.0	5.51	5	2.7

\* Expand to 100 with optional EJ-19U †Expand to 240 with optional EJ-23U #TXCO with ± 2.5ppm frequency stability.

## Digital Voice Modulator

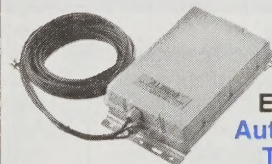
Communicate via digital voice modulation using the publicly-open ITU-TV.32 protocol. Experiment with digital voice modes. Easily switch between analog and digital modes. HT and mobile boards are on-air compatible with each other. Available boards: EJ-40U Digital Voice Board for DR-135 / 235 / 435 mobile and EJ-43U Digital Voice Board for DJ-596 HT.



DM-330MV

## Communications Grade Switching Power Supply

Compact, lightweight power supply for portable operations. Provides 32 amps peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit moves pulse noise. Short circuit protection. Front panel connections. Internal switch to convert voltage to 220V. Cigarette plug socket. **HRO Price \$149.95**



EDX-2 Automatic Tuner

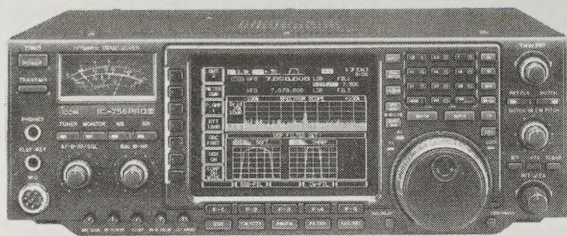
Mates with DX-70 / 77 radios. Tunes wire antenna 8-80 feet. Use for base, mobile, or marine installations. **HRO Price \$299.95**

## Mobile Accessories

Model	Description	DR-130T 430T M06T M03	DR-135T 235T 435T	DR-140T 150T	DR-620T	HRO Price
EDS-9	Remote Kit				*	\$45.95
EJ-19U	Memory Expansion	*				\$24.95
EJ-20U	Tone Squelch	*		*		\$33.95
EJ-40U	Digital voice board		*			\$119.95
EJ-47U	Digital voice board				*	\$169.95
EJ-41U	TNC unit		*			\$129.95
EJ-50U	TNC unit				*	\$119.95
PC-15B	Power Cord	*	*	*		\$10.95
MB-130	Mounting Bracket	*		*		\$19.95



Take your DXing to the Next Level  
+30 dBm-class  
Third-order Intercept Point



IC-756PROIII



### The 756PRO Third Generation's New Features

- Improved third order intercept points of +30dBm.
- Large inductors instead of small coils in the bandpass filter stage handle both strong and weak signals without distortion.
- Diodes with wide bandwidth characteristics provide low-distortion BPF switching.
- Fundamental-type 64 MHz roofing filter using a monolithic crystal filter provides a better shape factor and is less susceptible to inter-modulation distortion.
- Two newly designed preamplifiers use the same basic circuit as the IC-7800 to minimize distortion and maximize dynamic range.

Preamp-1 is a noiseless feedback design. Preamp-2 uses bipolar transistors for high gain.

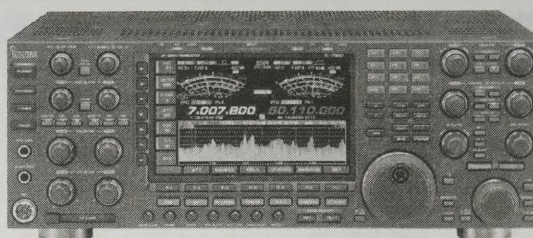
- Real time spectrum scope with a mini scope function allows you to monitor the scope screen while you use other function menus.
- Eight channel RTTY TX memory where you can edit and send up to a 62 character message for each memory.
- Adjustable SSB transmit bandwidth with three types of high low combinations stored in memory. The built-in audio equalizer has separate bass and treble adjustments to tailor your transmit audio quality.

### Inherited Properties from the 756PROII

- 32-bit floating point DSP & 24-bit AD/DA converters
- 30kHz to 60MHz general coverage receiver.
- AGC loop management.
- Dual watch to receive 2 signals on the same band simultaneously.
- Digital twin passband tuning.
- Manual notch function featuring 70dB attenuation..
- Automatic notch function.
- Digital voice recorder with a total of 90 seconds available for the 4 memory channels. The channels are soft partitioned to allow custom recording sizes.
- CW Memory Keyer.
- Adjustable noise reduction

- using 32-bit DSP processing.
- Adjustable noise blanker.
- Digital RF speech compressor.
- Highly stable transmitter using two 2SC5125 transistors in the PA unit.
- Highly stable crystal unit providing  $\pm 0.5\text{ppm}$  ( $-10\text{C}$  to  $+50\text{C}$ ).
- Triple band stacking register.
- SSB data communication.
- 5-inch TFT color display.
- Built-in high speed auto antenna tuner.
- 2 TX/RX antenna connectors and RX antenna connector.
- Analog and digital meter.

## HF RIGS



IC-7800

The IC-7800 is an artistic fusion of forty years analog RF circuit development with cutting edge digital technology. The result is 110 dB dynamic range and +40 dBm 3rd order intercept point in the HF bands.

- General coverage receiver from 300 kHz to 60 MHz.
- Transmits on amateur HF bands (except 60m) plus 6m.
- 5- 200 watts out (5-50 W AM).
- High speed auto antenna tuner.
- Two types of receive preamps and 7-step attenuator.
- 50 CTCSS tone encoder / decoder.
- VOX capability.
- DSP controlled CW keying waveform shaping. Memory keyer.
- Mechanical relay band pass filter.
- Three roofing filters.
- Automatic tracking.
- Double conversion super-hetrodyne system.
- AGC loop management using the DSP unit.
- AGC volume knob fine tuning.
- Digital IF filter.
- Manual notch filter.
- Two completely independent receiver circuits.
- Real time spectrum scope.
- Four 32-bit floating point DSP units and 24-bit AD/DA converters.
- Ultra high stability OCXO unit.
- 50 MHz band preamplifier & mixer.
- Digital twin passband tuning.
- Variable level noise reduction.
- 7-inch wide color TFT LCD.
- RTTY/PSK31 operation without PC connection.
- Microphone equalizer and adjustable transmit bandwidth.
- CF memory card for recording personal settings.
- Digital voice recorder.
- RF speech compressor.
- SSB data mode.
- 4 antenna connectors.
- Triple band stacking register.
- Variable noise blanker.

### QRP HF + 6m

#### IC-703 Plus HF Plus 6m

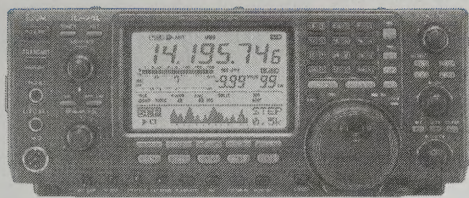


The IC-703 Plus is a full featured QRP, portable transceiver covering the HF and 6m bands. It features a built-in automatic antenna tuner, DSP capabilities, 10 watts of output power, a highly sensitive receiver, current consumption control and high frequency stability ( $\pm 0.5\text{ ppm}$ ). The emphasis is on portability

- Built-in automatic antenna tuner covers 1.8 to 54 MHz matching VSWR 1:7 to 2:0.
- DSP capabilities include a noise reduction function and automatic notch.
- Provides 10 W out (4 W on AM) at 13.8 VDC; 5 W (4 AM) with 9.6 VDC.
- Highly sensitive receiver of  $0.16\text{ }\mu\text{V}$  ( $0.18\text{ }\mu\text{V}$  for 50 MHz band).
- Maximum power set function at 10 / 5 / 2.5 / 1 / .5 watts.
- Controller detaches from main unit.
- IF shift, variable SSB carrier point.
- Spectrum scope function and SWR graphic function.
- 105 memory channels.
- Multiple filter options.
- Auto tuning step function.
- Speech compressor.
- RIT, VOX and noise blanker.
- 9600 bps data terminal on rear panel.
- Combined SQL and RF gain control knob.
- CI-V system capability.
- Bandstacking registers.
- Built-in preamplifier.



## HF + 6m + 2m



**IC-746PRO**  
HF Plus 6m + 2m



The IC-746PRO uses 32-bit DSP features to create the most flexible signal enhancing and interference reduction ever offered in this type of radio. With the 32-bit DSP processor and 24-bit AD/DA converter, the ham radio operator has the best listening environment for current band and operating conditions.

### All mode digital modulation and demodulation

For signal purity and clarity, an all mode digital PSN (Phase Shift Network) system has been incorporated into the DSP system. For transmit, this greatly reduces intermodulation distortion, producing the highest quality audio. The PSN separates the signal from noise by phasing out noise and other unwanted signals. With more than 51 different filter widths included, just dial in the width you want. Then select whether you want a sharp or soft filter shape for SSB and CW modes. Digital filters are separate from the SSB filters.

- Continuous coverage receiver from 30 kHz to 60 MHz and 108-174 MHz. Transmits on HF, 50MHz and 144 MHz bands.
- RTTY demodulator and decoder, ample CW functions, memory keyer, full break-in keying.
- Microphone equalizer, digital RF speech compression and a continuous duty 100W transmitter for all bands and all modes (AM is 40W).
- Large, multi-function LCD for ease of use in most any lighting condition. Multi-functions include band scope, memory names, key assignments, twin PBT settings, split frequency and memory keyer contents.
- Digital Twin PBT with manual notch filter, digital noise reduction and AGC loop management.
- Built-in automatic antenna tuner covers HF and 6 meter bands.

## All-Band HF



**IC-718**

- Receives 0.03 ~ 29.995 MHz.
- Transmits: HF amateur bands except 60m.
- Output power: SSB / CW / RTTY: 5 ~ 100 W variable, AM: 2 ~ 40 W variable.
- Modes: USB, LSB, CW, RTTY, AM.
- 101 memory channels.
- IF shift interference rejection.
- DSP built-in.
- VOX operation, mike compressor, RF gain control.
- Built-in electronic keyer.
- 10-key pad for direct operating frequency entering and memory channel selection.

## HF Plus VHF / UHF

**IC-7000**  
HF Plus VHF / UHF



With the IC-7000, IF-DSP technology comes to a multi-band transceiver. With 2X DSP, it out performs some base stations.

Notable features include improved AGC loop performance, digital IF filters, 2 X manual notch filters, a digital voice recorder, flexible installation with a detachable panel, remote control microphone, a 2-mode band scope with simplified one-touch operation. The 2-mode band scope will, in Center mode, center on the receiving frequency. In Fixed mode, the band scope sweeps a fix range.

- Internal memory keyer.
- Control circuit for optional antenna tuners.
- Built-in voice synthesizer.
- CI-V control capability.
- 503 memory channels.
- 100-step digital noise blanker.
- Multi-function S / PWR / SWR meter.
- Receiver preamp and attenuator.
- 16-step digital noise reduction, RIT.
- CTCSS and DTCSS tone squelch.
- ± 0.5 ppm high frequency stability.
- Continuously adjustable RF output.
- Digital RF speech compressor.
- Bass and treble audio equalizer.
- Adjustable SSB transmit bandwidth.

## HF + 6m + 2m + 70cm All-Mode

**IC-706MKIIG**

The compact, feather-weight IC-706MKIIG all-mode transceiver updates the IC-706. Improvements include: VHF band RF stage, standard tone squelch, 2 optional filters, and a built-in DSP plug in IC-UT106.



The IC-706MKIIG covers the HF bands from 160 - 10\* meters as well as the six, two meter and 70 cm bands. It includes all modes over its entire frequency range, including FSK for RTTY operation, and narrow FM on the HF bands. Receives 30 kHz to 70 cm with wide AM and wide FM broadcast reception.

It has a 100 watt output transmitter (40 watts AM) from 160 through 6 meters, with 50 watts output on 2 meters (4 watts AM) and 20W on 70cm. VOX is included, as well as a speech processor, I-Loop PLL circuit, and optional slot for narrow SSB filter (FL-223). Multiple CW functions include a built-in keyer, optional narrow receiver filter slot, full break-in (QSK), adjustable CW pitch and CW reverse functions, tone squelch, backlit switches, AF DSP, and auto repeater function.

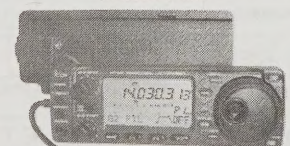
101 memories store up to 9 alphanumeric characters each. A dot matrix

display shows the popular menu features, frequency and multifunction meter data. A spectrum scope displays band activity at a glance.

The front panel detaches to aid mobile installation. The PS-85 optional switching power supply is great for making the IC-706 a base station. The AT-180 optional automatic antenna tuner for coax systems and the AH4 for long wire, whip or backstay operation.

\* Not 60 m

**Remote Head Kit**  
**RMK-706**



Remote head kit for 706 product. (Includes MB-62, MB-63, and OPC-581.)  
**HRO Price \$70.95**



## Icom Base Station Accessories

OPTIONS		HF RADIOS													VHF/UHF		RECEIVERS						HRO	Price	
		781	775	765	756	746	738	736	728	718	707	706	706 MKII	703	7000	7800	820	821H	R9000	R72	R75	R 100			R7000
External AC Power Supply	PS-85				*	*				*	*	*	*				*	*							\$269.95
	PS-125				*	*																			\$299.95
External Speakers	SP-7						*	*	*	*	*	*	*				*	*		*		*	*	*	\$75.95
	SP-10											*	*	*	*										\$55.95
	SP-12											*	*	*											\$44.95
	SP-20	1	*	1			*	*	*	*	*				*	*	*	*	1	*		*	*	*	\$239.95
	SP-21		*		*	*	*	*	*	*	*						*	*							\$119.95
Automatic Antenna Tuner	AH-4		*	*	*	*	*	*	*	*	*	*	*	*	*										\$259.95
	AT-180		*	*	*	*	*	*	*	*	*	*	*	*	*	*									\$364.95
HF Amplifier	IC-PW1	*	*	*	*	*	*	*	*	*	*	*	*												\$4,699.95
Antenna	AH-2B			*		*		*	*	*				*	*										\$349.95
Weather Proof Preamps	AG-25																*	*							\$149.95
	AG-35																*	*							\$169.95
	AG-1200																								\$169.95
Microphones	HM-36	*	*	*		*	std		*																\$69.95
	HM-103											*	*	*		*									\$74.95
	HM-151														*										\$59.95
	HM-118T												*												\$59.00
	SM-6	*		*			*	*	*	*	*						*	*							\$99.95
	SM-20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*							\$189.95
Mounting Brackets	MB-5								*	*	*						*	*		*	*			*	\$59.95
	MB-12																						*		\$59.95
	MB-18																								\$59.95
	MB-19		*																						\$74.95
	MB-23				*																				\$15.95
	MB-49						*	*		*															\$59.95
	MB-62												*	*	*										\$25.95
	MB-63												*	*											\$18.95
MB-65													*	*										\$35.95	
Handle	MB-23								*		*						*	*		*	*			*	\$15.95
	MB-72													*											\$14.95
	MB-72														*										\$14.95
CI-V System	CT-16	*	*	*		*	*	*	*	*	*	*	*						*						\$119.95
	CT-17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	\$129.95
High Stability Crystal Units	CR-282		*	*		*	*	*																	\$149.95
	CR-293																*	*			*				\$279.95
	CR-338									*	*														\$79.95
	CR-502				*							*	*												\$76.95
FM Unit	UI-8																			*					\$109.95
	UI-9										*														\$99.95
DSP Unit	UT-106									*				*							*				\$139.95
Tone Squelch	UT-86												*												\$69.95
Voice Synthesizer	UT-102				*	*				*			*	*							*				\$69.95

1: Style and size are matched with the equipment.

## Icom HF Specifications

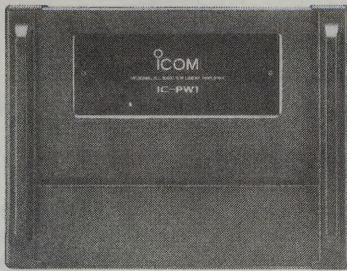
Model	Receive Freq Range	Power Supply	Current Drain Xmit	Power Output †					Mike Z ohms	Receive Circuitry	Sensitivity 1.8-30 MHz	RIT / XIT Range	Notch	Audio
				AM	FM	SSB	CW	FSK						
IC-703	30kHz-60MHz	13.8 VDC	20A	1-4	1-10	1-10	1-10		600	Double Conversion	<16µv at 10 dB	±9.9 kHz		>1.0 W
IC-706MKIIG	30kHz-200MHz + 70cm	13.8 VDC	20A	40	100*	100*	100*	100	600	Dual Conversion (HF)	<18µv at 10 dB	±9.9 kHz		>2.0 W
IC-718	30 kHz - 29.99 MHz	13.8 VDC	20A	40	100	100	100	100	600	Double Conversion	<18µv at 10 dB	±9.9 kHz	DSP	>2.0 W
IC-746PRO	300 kHz - 60 MHz, 108 - 174 MHz	13.8 VDC	23A	40	100#	100#	100#	100	600	Triple Conversion	<18µv at 10 dB	±9.9 kHz	Manual/ Auto DSP	
IC-756PROIII	30 kHz - 60 MHz	13.8 VDC	23A	40	100	100	100	100	600	Triple Conversion	<15µv at 10 dB	±9.9 kHz	Manual/ Auto DSP	>2.0 W
IC-7000	300 kHz - 199.9999 MHz, 400 - 470 MHz	13.8 VDC	22A	1-40††	##	##	##	##		Triple Conversion	<18µv at 10 dB	±9.9 kHz		>2.0 W
IC-7800	30 kHz - 60 MHz	85-265VAC		50†	200†	200†	200†	200†	600	Double Conversion	<16µv at 10 dB	±9.9 kHz		>2.6 W

† Output is continuously adjustable from 5 to full power # 50 watts on 2 meters, 20W 70cm G Model \* 50 watts on 2 meters, 20W 70cm ## 2-100W HF/50MHz, 2-50W VHF, 2-35W UHF



# HF ACCESSORIES

## HF + 6m Amplifier



**IC-PW1**

The IC-PW1 linear amplifier provides a wide frequency coverage with up to

1kW output requiring only a maximum of 100 watts input. The duty cycle is 100 percent with full break-in operation. It covers amateur bands from 160 meters to 15 meters plus 6 meters (10 m conversion information for licensed hams) and includes an automatic antenna tuner for all bands. Internal circuitry allows the ALC to be adjusted over a wide range allowing the PW1 to be used with almost any rig – not just Icom. Operates on 110 or 220 VAC 50 or 60 cycle. Single box shipping and the remote head is included.

## Cloning Software

Icom cloning software for Windows allows you to preprogram memory channels with operating frequencies, set tones, set power levels, set squelch levels, set up auto-dial DTMF frequencies, and exchange operating frequencies. Call for price quotes.

- **CS2710** for 2710H (with OPC-646).
- **CSWHH-4** for Windows (IC-T2A, T7A, W32A, T8).
- **RS-746** is remote software for IC-746.
- **RS-746** control software without cable (746).
- **CSWHH-4** software & cable (T2H, T7H, T8A, W32A).
- **CSW710/207** software without cable (207H, 2710H).
- **CSWHHRX** software/cable (R2, R10).
- **CS-R3** without cable (R3).
- **CS-R5** without cable\* (R5).
- **CS-2720H** without cable\* (2720H).
- **CS-V8000** without cable (V8000).
- **CS-V8A** without cable (V8A).
- **CS-2800** without cable (2800).
- **CS-T90A** without cable (T90A).

\* OPC-478U USB cable for IC-2720H and IC-R5.

**Ham Radio Outlet will ship your products quickly from the store nearest you.**

**Most orders greater than \$100 receive free UPS Brown shipping in continental US.**

## Icom HF Filters

Filter	Center Frequency	Bandwidth	Mode	781	775	765	756	746	738	737 A	736	735	729	728	725	726	718	707	706	706 MKII	703	R 71A	R 72	R 75	R 8500	R 9000	HRO Price
FL52A	455 kHz	500 Hz	CW	std		std	*	*	*	*	*						*	*			*			*	*	*	\$179.95
FL53A	455 kHz	250 Hz	CW	std	*	*		*	*	*	*						*	*			*			*			\$179.95
FL63A	9.0106 MHz	250 Hz	CW									*															\$99.95
FL96	455 kHz	2.8 kHz	SSB					*									*							*			\$179.95
FL100	9.0106 MHz	500 Hz	CW				*	*	*	*	*		*	*	*	*			*	*		*	*	*			\$119.95
FL101	9.0106 MHz	250 Hz	CW	std	*	*	*	*	*	*	*		*	*	*	*			*	*		*	*	*			\$99.95
FL102	9.0100 MHz	6.0 kHz	AM	std	*	*																					\$75.95
FL103	9.0115 MHz	2.8 kHz	SSB	*				*											*	*		std		*			\$109.95
FL-222	455 kHz	1.9kHz	SSB		*		*	*									*				*			*			\$199.95
FL-223	9.0115 MHz	1.9 kHz	SSB		*		*	*											*	*			*		*		\$99.95
FL-232	9.0115 MHz	350 Hz	CW		*		*	*											*	*			*		*		\$89.95
FL-257	9.0115 MHz	303 kHz	SSB														*			*			*		*		\$199.95

## HF Antenna Tuners



**AH-4 Automatic HF Antenna Tuner**

Tune up from HF through 50 MHz band. The AH-4 auto-tuner covers all amateur bands from 80 to 6 meters when used with a minimum 23' long wire antenna. With the optional AH-2b antenna element, tune 40 through 6 meters for mobile operation.

It has automatic band changes and tunes usually in less than 2.5 seconds. The 45 memories store SWR minimum and tuning combinations. With those Icom radios with the TUNER feature, the AH-4 is remotely controlled from the radio front panel. Requires only 300 mW to tune and handles up to 120 watts. **HRO Price \$259.95**

## Icom HF Tuners

Features	AT-180	AH-4
<b>Input Power (Watts)</b>		
Max	120	120
Min	8	10
<b>Auto Tune Time (seconds)</b>		
New Band	2 - 4	2 - 3
Same Band	≤3	1
Tuning Accuracy	VSWR<1.5	VSWR<2:1
Auto Band Switching	yes	yes
Preset	CPU	CPU
Matching	Controlled	Controlled
Power Supply	13.8 VDC	13.8 VDC
Frequency Coverage	1.8-28 MHz	3.5-54 MHz
Antenna System	Coax fed Antennas	Long wire, whip, boat backstay
Radios	IC-706	Most
HRO Price	\$364.95	\$259.95

Note: AT180 will work with most Icom HF rigs, but some need additional cabling to operate.



## 2m Mobiles

### IC-V8000

75 watts of power for your ultimate 2m mobile experience.

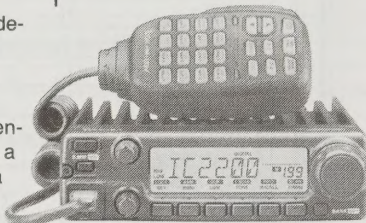


The IC-V8000 combines a one piece, die-cast aluminum chassis with 75W of transmit power to give you the most powerful 2m mobile transceiver in its class.

- Remotely control rig with HM-133 mike.
- Easy operation with a quick reference of user-defined memory channel information.
- 6 character alphanumeric display.
- CTCSS & DTCS are standard.
- DTMF encoder is standard with 10 channels with up to 24 digit DTMF codes.
- Optional UT-108 DTMF decoder.
- Front firing speaker.
- Dynamic Memory Scan has 200 alphanumeric memories. DMS system allows full customized scanning in 10 banks.
- FM narrow mode switchable.
- Clone from a PC or between radios.
- Weather Alert Scan (US version only).

### IC-2200H

The IC-2200H provides enhanced digital features plus a stable 65W output through a MOS-FET amplifier. A one-piece aluminum chassis keeps the transceiver cool even at high duty cycles.



- Retains simple operation with a large tuning dial. Secondary functions are recalled by holding the appropriate button.
- A total of 207 alphanumeric memory channels.
- Dynamic memory scan allows scanning of selected memory banks.
- 50 CTCSS and 104x2 DTCS encode/decode.
- Selectable green or amber display.
- "Pocket Beep" signals an incoming call.
- Optional Digital Unit (UT-115). When connected to an external GPS, position information can be exchanged.
- 24 DTMF autodial memories.
- DTMF code squelch/pager with optional UT-108.
- Weather channel.
- Selectable squelch delay.
- Built-in 10dB squelch attenuator.

# 2m / 70cm MOBILES

## Dual Band Mobiles

NEW!

### IC-2820H

This fully D-STAR-compatible mobile transceiver, packed with useful features, provides 50 W on both VHF and UHF. Die-cast aluminum chassis keeps the powerful MOS-FET power amplifiers running cool. The optional UT-123 provides an on-board GPS module for D-PRS operation and realtime location data on the 2820's display. V/V U/U simultaneous receive, diversity receive capability with 2 antennas, 522 memory channels, built-in wide band receiver. Controller can be separated from main unit.



### IC-208H

The IC-208H features 55 watts out on 2m and 50 watts on 70 cm. The output is switchable in three steps from 5 watts to 15 watts to the maximum power for each band.

- Wide-band receiver - 118 to 999.990 MHz (cellular blocked).
- 500 memory channels separable into 10 banks.
- Controller separation capability with included cable.
- 6-character alphanumeric LCD display. Name memory channels for easy recognition.
- Weather alert function.
- Select LCD backlighting color: amber or green.
- Big clearly labeled function keys.
- Dynamic memory scan.
- Multiple scanning modes.
- Switchable wide/narrow channel spacing.
- Standard accessories include HM-133 hand microphone, OP-600 separation cable, DC power cable and mounting bracket.

### IC-2720H

This mobile transceiver has V/V, U/U or V/U simultaneous receive capability and independent tuning knobs. Selectable amber or green display, MOS-FET power amp, and a multifunction microphone HM-133.



It also supports 9600 bps packet communications.

- Extended receive capability. 118-550 MHz (left side) 118-174, 375-550, 810-999.99 (right side) (cellular blocked).
- 50 W on VHF and 35 W on UHF.
- Separated control from main unit. 3.5 m cable included.
- 212 memory channels.
- 104 x 2 DTCS / 50 CTCSS tone squelch operation is standard.
- Selectable squelch attenuator and delay.
- 4 step LCD backlight.
- 12 DTMF memories.
- Auto repeater function.
- High speed Tx/Rx switching time.

## Icom VHF Specifications

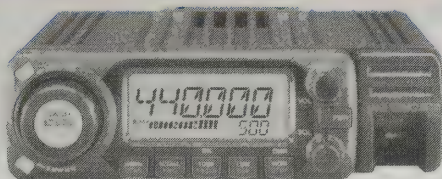
Model	Freq Range	Mode	Power Supply	Current Drain Xmit	Current Drain Rec	Power Out Watts	Ant Z ohms	Mike Z ohms	Sens	Audio Power	Built-in AC Supply
IC-208H	2m / 440 MHz%	FM	13.8 VDC	12 A	1.0 A	55 / 50	50	600	<.18 $\mu$ V	3 W	no
IC-910H	2m / 440 MHz*	All	13.8 VDC	23 A	2.5 A	100/75/10*	50	600	<.18 $\mu$ V	2 W	no
IC-2200H	2m	FM	13.8 VDC	16 A	1.0 A	65	50	600	<.18 $\mu$ V	2.4 W	no
IC-V8000	2m	FM	13.8 VDC	15 A	1.0 A	75	50	600	<.15 $\mu$ V	>2.0 W	no
IC-2720H	2m / 440 MHz%	FM	13.8 VDC	12A	1.8 A	50 / 35	50	600	<.18 $\mu$ V	>2.4 W	no
IC-2820H	2m / 440 MHz%	FM	13.8 VDC			50 / 50	50	600			no
ID-800H	2m / 440 MHz%	FM	13.8 VDC	12.5A	1.1A	50 / 50	50	600	<.18 $\mu$ V	>2.0 W	no

† Extended receiver coverage 118-174 MHz (airband included), 440-450 MHz %extended receiver range. See text with radio.



## Digital Transceivers

### ID-800H



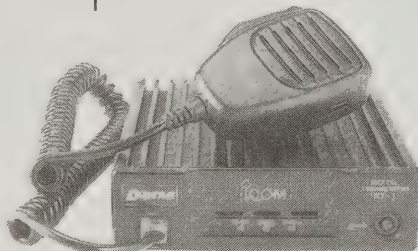
The dualband ID-800H transceiver is a vital part of a D-Star digital voice system.

- TX: 144-148 MHz and 420-450 MHz.
- RX: 118-173.995 MHz, 230-549.995 MHz, 810-999.99 MHz (cell blocked).
- Power out on VHF is 55 W, 5 W selectable; UHF 50 W with 15 W, 5 W selectable.

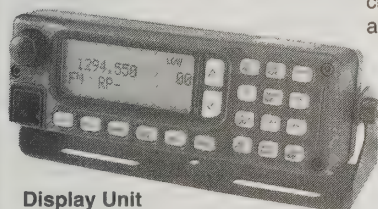
- FM (analog), AM (analog RX only), GMSK (digital) modes.
- 512 memory channels with 500 regular, 2 call, and 10 scan edges.
- Detachable front panel included.
- GPS position exchange with external GPS.
- 20 character short text messaging with on-screen display.

### IC-ID-1

While the ID-1 transceiver is a vital part of a D-Star system, you won't have to wait for a new repeater to be set up in your area. This rugged little rig operates with current analog 1.2 GHz repeaters, plus simplex digital operation with another ID-1. Its operating



frequency range is 1240-1300 MHz with FM and GMSK (Digital) modulation formats. The ID-1 includes alphanumeric memory channels, CTCSS encode/decode and scanning, PLUS full PC control via the USB port (a black box 1.2 GHz radio!). Now for the fun part... the ID-1 supports a 10 BASE-T ethernet cable for the 128K Data operation! Explore the benefits of wireless high-speed integrated digital connections!

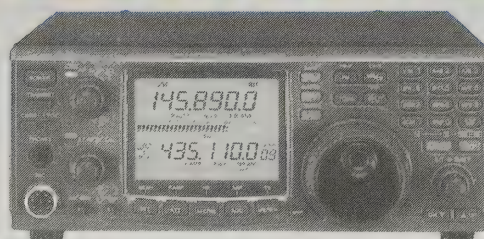


Display Unit

## BC-119 Adapters

Adapter	For Batteries	HRO Price
AD-25	BP-131A, BP-132A, BP-157A	\$63.95
AD-27	BP-100, BP-130	\$18.95
AD-28	BP-131/132/167, BP-160/174 (+AD-75)	\$18.95
AD-50	CM-166 (+AD-75)	\$17.95
AD-51	BP-171/172/173, BP-180 (+AD-75)	\$14.95
AD-56	BP-171/172/173, BP-180 (+AD-75)	\$18.95
AD-67	CM-140/141/142	\$10.95
AD-68	CM-138/139/185	\$14.95
AD-69	BP-185/186	\$19.95
AD-81	BP-195, BP-196	\$17.95
AD-87	BP-198, BP-199, BP-200(+ AD 88)	\$8.95
AD-94	BP-209/210/222	\$17.95
AD-100	BP-227	CALL
AD-101	BP-209/210/211, BP-222	\$25.95

## VHF / UHF Base Station



2m  
440 MHz  
(+1.2 GHz)

### IC-910H

Two meters and 70 cm are standard on the IC-910H. With the optional UX-910, it also operates on 1200 MHz. It is an all mode transceiver with up to 100 W output. It's a great rig for satellite operation. It features a large LCD display and 10-key pad for ease of operation.

- 100 W on 2 meters, 75 W on 440 MHz and 10 W with the optional UX-910 on 1200 MHz.
- Simultaneously works two bands. Cross band and full duplex operation.
- Satellite mode operation support.
- 10-key pad for direct entering of frequency or memory channels.
- 3.5 inch large LCD.
- 9600 bps PACKET communication.
- IF shift interference rejection.
- Optional DSP capability with the AF DSP UT-106.
- Full CW support with speed adjustment, full and semi-break in.
- 50 CTCSS tone encoder, VOX, speech compressor, 99 memory channels.
- PC interface with optional CT-17.

## Handheld Batteries/ Chargers

Model	Volts	Rating mAh	Wall Charger	Desk Charger	HRO Battery Prices
BP-8	8.4	800	BC-16u	BC-35	\$99.95
BP-83	7.2	600	BC-110A	BC-72	\$90.95
BP-84	7.2	1000	BC-110A	BC-72	\$99.95
BP-131	7.2	900		BC-119*	\$119.95
BP-157	7.2	900	BC-77A	BC-119*	\$59.95
BP-160	7.2	700	BC-77A	BC-119*	\$66.95
BP-171	4.8	700	BC-74A	BC-119*	\$83.95
BP-172	4.8	650	BC-74A	BC-119*	\$69.95
BP-173	9.6	600	BC-74A	BC-119*	\$99.95
BP-180	7.2	600		BC-119*	\$83.95
BP-194	**				\$18.95
BP-195	9.6	700	BC-110A	BC-119*	\$42.95
BP-196	9.6	1050	BC-110A	BC-119*	\$53.95
BP-197	**				\$24.95
BP-198	4.8	700	BC-110A	BC-119*	\$59.95
BP-199	6	700	BC-110A	BC-119*	\$70.95
BP-200L	9.6	760	BC-110	BC-119N	\$89.95
BP-202				BC-119N	\$17.95
BP-204	**				\$35.95
BP-206	3.6	1650	BC-136A	BC-135	\$63.95
BP-208N	**				\$18.95
BP-209N	7.2	1100	BC-137	BC-119N	\$53.95
BP-210N	7.2	1650	BC-137	BC-119N	\$79.95
BP-211N	7.4	1600	BC-137	BC-119N	\$89.95
BP-217	7.4	1300		BC-139	CALL
BP-222	7.2	600	BC-137	BC-119N	\$35.95
BP-227	7.2	1700	BC-145	BC-119N	CALL

\* Note: The new BC-119N-01 has to have either the AD-75 or AD-88 as well as adapters (see left).

\*\* "AA" Alkaline Pack.



## GMRS Radio

### IC-F21GM

### IC-F21BR

General Mobile Radio Service (GMRS) frequencies are for family use and extend your operating range up to 5 miles simplex and 25 miles through a repeater. A licence is required. Call for quotes.

**IC-F21GM:** 7 channels shared with the Family Radio Service (FRS), provides 15 channels and 4 W output power.

**IC-F21BR:** similar but also can be used for business applications.

## Family Radio

### IC-4088A

This 14-channel family radio model features a long, high-performance antenna for extended communications range. A built-in voice scrambler enhances your privacy. 38 CTCSS frequencies. Use AA or NiCd batteries.



## 2m / 70 cm

### IC-P7A



- VHF/UHF with 1.5W/1.0W output.
- CTCSS/DTCS tone.
- 1000 alphanumeric memory channels.
- Ultra compact.
- 20 hours of operating time or 15 hours of continuous TV / FM receive.
- Wideband receiver for FM, TV (audio) and other services.

### IC-T7H-Sport



- This HT fits easily in your palm or pocket.
- 70 memories, 9 DTMF autodial memories.
  - High speed scan / scan timer.
  - Encode / decode included.
  - 6W out 13.8 VDC.
  - PC programmable.
  - One touch operation.
  - Easy scanning display.
  - Autoband selection, memory allocation.
  - Wide band receive.
  - Microphone remote control.
  - Compatible with T22A, W31A and Z1A accessories.
  - Battery Case (AA batteries)

## Tri-Band

### IC-T90A



- Wideband AM, FM, WFM receive.
- 5 watts out on 6m, 2m and 70cm.
- Receiver 495 kHz to 999.990 MHz (cellular blocked).
- 555 alphanumeric memory channels with DMS
- DTCS and CTCSS tone squelch. DTMF encoder with 10 memories.

## D-STAR Digital

### One Radio.

### Two Bands.

### Three times the fun!

### IC-91AD IC-91A



The IC-91AD/A features advanced digital technology in the D-Star DV mode. This digital mode includes:

- DV mode operation with an AMBEC codec. 950 bps data can be sent simultaneously with the digital voice transmission. Optional UT-121 required for the IC-91A.
- One touch reply button.
- Built-in voice recorder and auto reply button.
- Optional PC remote control capability with optional RS-91 software.
- Position information exchange when connected to an external GPS receiver (receive only when no external GPS is attached).
- DX communication over D-STAR.

Other features include:

- Wide band receiver with dual watch capability. VFO A Range: 0.495-999.990 MHz (cellular blocked); VFO B: 118-174, 350-470 MHz.
- Large dot matrix display.
- Spectrum bandscope.
- 5 watts (typical) output.
- Keypad navigation to give quick access to the many functions.
- External DC power jack. With the optional OPC-254L you can operate and charge at the same time.
- Built-in CTCSS / DTCS encoder / decoder.
- Squelch release function to monitor weak signals.
- Water resistant construction.
- Auto power save, power off / on.
- 26 memory banks with selected bank and band link scanning.
- 10-channel 16-digit DTMF memory.
- 10 dB built-in attenuator.
- Total of 1304 memory channels.
- Automatic repeater function on USA models.
- Weather channel with weather alert on USA models.

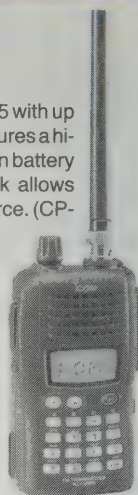
# HANDHELDS

## Single Band



### IC-V85 2 Meter

The water resistant IC-V85 with up to 7 W of output power features a hi-capacity, 1700 mAh, Li-Ion battery pack. The DC power jack allows use of an external DC source. (CP-19R required for operation from a DC source higher than 11 VDC.) The radio features 136-174 MHz wideband VHF receive, 144-148 MHz transmit with  $\pm 2.5$  ppm high frequency stability. Power output is adjustable to 7.0/4.0/0.5 W. A weather alert is also provided.



### IC-V82 IC-U82 2 Meter UHF D-STAR Digital with optional UT-118

The IC-V82 has 7 watts out and the IC-U82 has 5 watts.

- FM (analog) GMSK (digital).
- V82: TX 133-148 MHz; RX 136-174 MHz.
- 200 alphanumeric memory channels, 1 call channel, 6 scan edges.
- 10 memory banks and band link scan.
- 5 character alphanumeric display.
- Built-in CTCSS / DTCS encoder/decoder.
- PC programmable.
- 16 DTMF autodial memories.
- Optional Digital Unit - UT-114.
- Optional DTMF decoder UT-108 offers ANI and pager functions.
- 20 character short text messaging.
- Optional voice scrambler unit, UT-109 or UT-110.



### IC-V8 Sport 2 Meter

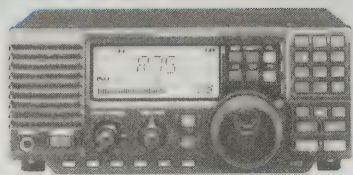
- 100 memories.
- 5.5 W output.
- Reverse shift function.
- 16 button keypad for easy-to-access functions.
- 5 character alphanumeric display.
- PC cloning capability.
- CTCSS/DTCS standard.
- Std DTMF encoder. Optional DTMF decoder (UT-108).
- Battery Case (AA battery).











## IC-R75

This receiver covers the HF bands plus 6 meters (0.03 to 60 MHz). It features twin PBT, built-in DSP capability, and a front mounted speaker. Modes include USB/LSB, CW, RTTY, AM/S-AM and FM. A complete line of filters are available. Operates at 13.8 VDC  $\pm$  15% at 2.0 A. Features 101 memories (99 regular and 2 scan edges. Program scan, memory scan and priority scan.

Direct frequency input with numeric keypad. Two-level pre-amp, noise blanker and selectable AGC.

## IC-R5 \$199.95

The IC-R5 receives 100 kHz to 1209.996 MHz (822-851 & 867-896 MHz blocked). It has 500 alphanumeric memory channels, DTCS and CTCSS built-in, high speed scanning, pulse control squelch function and weather alert. Icom's exclusive DMS scanning system allows the user to customize memory channels into separate scanning lists from 2-100 channels per bank. Receives AM/FM/WFM. The Icom Hot 100 SWL frequencies and TV channels are pre-programmed. The IC-R5 is computer programmable with optional software and programming cables (RS-232 or USB cables are available).

## IC-R5 Accessories

Model	Description	HRO Price
<b>Cloning</b>		
CS-R5	Cloning software requires OPC478 or OPC478U	\$40.95
OPC478	PS232C Cloning cable	\$45.95
OPC478U	USB Cloning Cable	\$60.95
OPC474	Cloning Cable-Handheld to handheld	\$18.95
<b>Headphone Accessories</b>		
HP-4	Lightweight headphone	\$29.95
HM-133	Earphone	\$90.95
<b>Other Accessories</b>		
AS-92SMA	BNC antenna adapter	\$16.95
BC-149A/D	Wall Charger	\$40.95
CP-18A	Cigarette Lighter Cable	\$30.95
LC-146A	Carrying Case	\$24.95

## IC-R3

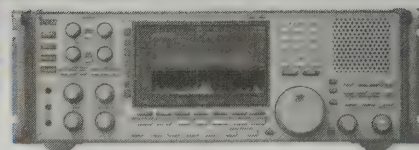
A first for a hand-held receiver: a built-in TFT color LCD shows tuning step, receiving frequency, memory channel number, and more. A clear TV picture can be displayed. NTSC M, PAL N, PAL B/G or PAL I is supported depending on version (only NTSC in US). Has super wide frequency coverage from 0.495-2450 MHz (821.995-851.995 and 867-896 MHz blocked) with



AM, FM, wide-FM, and TV picture receive capability standard. Receives ATV on 430, 900, 1200 and 2400 MHz.

## IC-R20

The IC-R20 retains many of the features of the R10 including voice scan control, attenuator, RF gain control, noise blanker, automatic noise limiter, multiple scan functions, CI-V PC control, backlit keypad. New features include wide range receive 0.15 to 3304.9999 MHz (822-851 and 867-896 MHz blocked), SSB/CW/AM/FM/WFM, dual watch between bands, IC audio recorder, auto squelch, 1250 memory channels, CTCSS / DTCS / DTMF decode, internal bar antenna for MF reception.



## IC-R9500

### Professional Communications Receiver

- +40 dBm IP3 / 110 dB wide dynamic range.
- Measuring class accuracy. Dual IF filter.
- Superior BPF unit.
- Dual DSP. 10 VFOs.
- 7" wide color TFT LCD.
- High resolution spectrum scope. 1000 memories.
- 2 channel noise blanker.
- 5 roofing filters. 2 point manual notch filter.
- 0.005-3335 MHz. Cellular blocked.
- All bands: SSB, CW, FSK, AM, FM, WFM on some.
- Digital voice recorder.
- 4 antenna connectors

## PC-Controlled

### IC-R2500 Dualwatch Digital Mode Diversity Receiver



The IC-2500 is a great receiver for the mobile operator.

- Dual watch (2 antennas required) receive covering 0.01-3299.999 MHz.
- Receives AM, FM, WFM, SSB, CW, DV (optional UT-118), and P25 (optional UT-122) on main receiver. Covers 50-130MHz in AM, FM and WFM on sub-receiver.
- Diversity receive capability selects the antenna with best signal (2 antennas required).
- 1000 alphanumeric memories.

### IC-R1500 Mobile

Wideband mobile receiver with remote control head (cable supplied) covers 0.01 - 3299.999 MHz (cellular blocked).

- 60 channel /second scan.
- Optional DSP with UT-106.
- 1000 alphanumeric memories in 21 banks.
- CTCSS / DTCS tone and pocket beep.
- VSC (voice squelch control).
- IF filter, IF shift (CW, SSB).
- Noise blanker (SSB, CW, AM).
- RF attenuator.
- Weather alert (US only).
- All functions are available when connected to a PC. Cloning to read/write memory channels from the PC.

### IC-PCR2500 All Mode

A PC controlled dual band, dual watch digital mode receiver. It covers 0.01-3299.99 MHz in AM, FM, WFM, SSB CW, DV and P25 modes on the main receiver. The sub-receiver can simultaneously cover 50-1300 MHz in AM, FM and WFM modes. (Two antennas are required for dual mode operation.) Cellular blocked.

- Recording function allows digital mode reception with optional UT-118 and UT-122 (P25).
- Diversity receive ability.
- 3 receiver screens.
- Multi channel monitor.
- DSP capability.
- Bandscope and time-line scope.
- Recording function.
- Up to 2600 memories.

### IC-PCR1500 All Mode

All functions are controllable from your PC. Receives from 0.01 to 3299.999 MHz (cellular blocked).

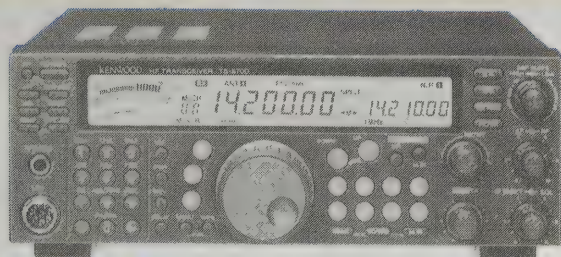
- Multi-channel monitor.
- 3 interface screens.
- Timeline and bandscope.
- Recording function.
- DSP capability opt. UT-106.
- High speed scanning.
- CTCSS/DTCS tones and duplex mode operation.
- S-meter squelch.
- Up to 2600 memory channels per file.

Notice: The R3, R5, PCR1500 and R1500 are available unblocked to authorized Federal Agencies.



# KENWOOD

## Digital HF



**HRO  
Discount Price  
\$CALL**

**TS-570D(G)**

**Super  
Special**

The TS-570 HF rig is perfect for base or mobile operation.

- 500 kHz to 60 MHz general coverage receiver.
- Transmit on amateur bands from 160 to 10 meters.\*
- Variable transmit output 5 to 100 watts in 5 watt increments.
- 16-bit DSP AF signal processing.
- Large LCD display.
- Alphanumeric sub-display provides menu, mode guidance, split frequency, digital filter selection.
- Full scanning capabilities: variable scan speed. Scan across channels, groups of 10, all except locked out channels, or a frequency range between two channels.
- Enhancement includes noise reduction for CW and SSB, audio equalization, slope tuning and automatic IF filter bandwidth.
- New "soft touch" keys.
- Two antenna ports plus a packet port.
- Automatic antenna tuner.

- 100 memory channels.
- 10 key direct entry.
- 57600 bps PC control.
- Full/semi break-in CW.
- Built-in electronic keyer with 0 to 100 WPM and dual key inputs (for paddle and straight key) and manual weight.
- CW message memory / reverse mode.
- Eleven CW DSP filters.
- CW auto tune mode links with RIT without changing transmit frequency.
- CW auto tune enables automatic zero-beating for CW operation.
- TX sound quality monitor with 9 steps.
- NR1(SSB): operator controlled in 9-steps or automatically tracks signal.
- NR1 and NR2 settings reconfigured automatically when modes change.
- "One-touch" DSP filter wide mode.
- RCP-2 remote control software.
- RS-232 com port.
- Opt. voice synthesizer VS-3.
- Optional filters: YK-88C-1 (500 Hz) and YK-88CN-1 (270 Hz) for CW. YK-88SN-1 (1.8 kHz) for SSB.

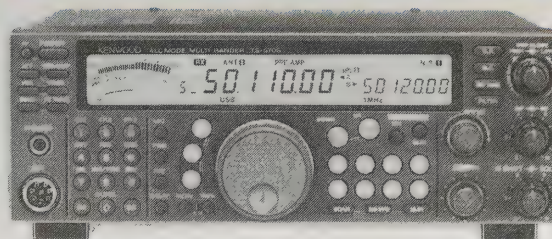
## Kenwood HF Specifications

		Power Supply		Current Drain		Power											
Model	Receiver Frequency Range	50/60 Hz AC	DC	Xmit	Rec	AM	FM	SSB	CW	FSK	FSK Shift	Mike Z ohms	Receive Circuitry	Sensitivity	RIT / XIT	Notch Filter	Audio
TS-2000*	0.5-30 MHz, 50-54 MHz, 144-138 MHz, 430-450 MHz, 1240-1300		13.8 V	20.5 A	2.0 A	100	100	100	100	100	100	600	Quadruple Conversion	<11µV SSB,CW,FSK (varies with band and mode)	±20 kHz	> 30 dB	1.5 W
TS-570D(G)	500 kHz - 30 MHz		13.8 V	20.5 A	2.0 A	25	100	100	100	100	(1)	500 - 50 k	Double Conversion	<4µV SSB,CW,FSK	±9.99 kHz	-	1.5 W
TS-570S(G)	500 kHz- 30 MHz, 6M		13.8 V	20.5 A	2.0 A	25	100	100	100	100	(1)	500 - 50 k	Double Conversion	<4µV SSB,CW,FSK	±9.99 kHz	-	1.5 W
TS-480SAT†	500 kHz - 60 MHz		13.8 V	20.5 A	1.5 A	25	100	100	100	100		600	#	< .2 µV	±9.99 kHz	-	2 W
TS-480HX	500 kHz - 60 MHz		13.8 V	41.0 A	1.5 A	50	200	200	200	200		600	#	< .2 µV	±9.99 kHz		2 W

# Double Conversion SSB, CW, AM; Triple FM (1)170,200,425,850 Hz \*Output440MHz 50 W and 1000 MHz 10 W †Output 6M 480HX - 100W/50W AM 480AT 50W/25 W AM

## HF RIGS

### Digital HF + 6 Meters



**Super  
Special**

**TS-570S(G)**

**\$CALL**

HRO Discount Price

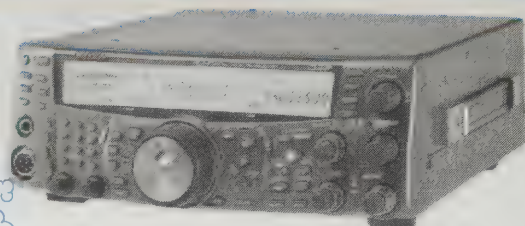
The TS-570S(G) has all the features of the TS-570D(G) with the addition of 6 meters. Operation on 6 m includes the spectacular, built-in DSP system, 100 watts output, and preset auto antenna tuner.

- AF-stage digital signal processing.
- 16-bit AF-stage DSP.
- Adjustable transmit sound quality and NR1 noise reduction.
- Digital filtering with 3 CW DSP filters.
- Compact enough to serve as a mobile unit.
- CW auto tune.
- Compatible with Kenwood's Sky Command System.
- Extensive memory functions - 100 memories, scroll function and 5 quick memories.
- Large LCD display.
- Wide-band receiver covers from 500 kHz to 30 MHz and 50 to 54 MHz.
- PC-control option.

**HRO will ship products quickly from the store nearest you.**  
**Most orders greater than \$100 receive free UPS Brown shipping in continental US.**



## All-Mode / All-Band



### TS-2000

\$CALL - HRO Price

The TS-2000 is a marvel of electronic engineering. Kenwood's stylish all-mode multibander is packed with top-end features yet compact enough to use at home, in your car, or on a DX'pedition. With a 3D front panel featuring backlit keys and a large amber display, its appearance is as distinctive as its performance. The TS-B2000 is a "Black Box" version for computer control or vehicle use with the optional RC-2000 mobile controller. ARCP-2000 radio control software is supplied with the TS-B2000.

- All mode multibander: HF\*/50/144/440/1200 MHz (optional UT-20 required for 1200 MHz operation on the TS-2000).
- 500 kHz to 1300 MHz wide band receiver with dual-channel receive. Has satellite mode plus a sub 144/440 MHz FM/AM receiver so two frequencies can be received simultaneously.
- The high-duty transmitter provides 100 watts on HF/50/144 MHz bands (AM 25 watts). There is 50 (AM 12.5) watts on 440 MHz. For 1200 MHz operation, the unit delivers 10 (2.5 AM) watts.

- Digital signal processing combines IF-DSP with AF-DSP (sub band) to provide precision filtering and interference reduction.
- The IF digital signal processing provides for DSP detection, digital filtering, IF auto notch and IF AGC. The AF digital signal processing features an automatic beat cancel, a manual beat cancel, CW auto tune, two types of Noise reduction and TX audio shaping.
- High speed processing using two 16-bit DSP chips, double precision computing and a 100 MHz CPU and 24-bit A/D and D/A converters to provide quick response.
- Satellite communications uses main-band circuits which benefit from the IF-DSP.
- The Kenwood Sky command System II Plus is

built-in allowing the transceiver to be operated remotely with one handheld transceiver.

- High frequency stability is obtained with a built-in TCXO with professional performance  $\pm 0.5$  ppm (-10 to 50 degrees C).
- Optional mobile controller and optional control software allows for remote and computer controlled operations. Has a built-in auto antenna tuner, DX cluster tune and an antenna terminal dedicated to HF low-band operation.
- The TNC is compliant with the AX.25 protocol for Sky Command and DX cluster tune.
- The TS-2000 has other expanded power and performance features.

\* Not 60m

### TS-B2000

\$CALL - HRO Price



## HF Accessories

Option	Model	950 SDX	940S	930S	850S	870S	570D 570S	450S 690S	440S	430S	140S 680S	480	50S	60S	HRO Discount Price
Microphone Hand Desk	MC-43S	std	std	std	std		*	std	std	std		*	*	*	\$59.95
	MC-47						*					*	std	std	\$59.95
	MC-60A	*	*	*	*		*	*	*	*		*	*	*	\$139.95
	MC-80	*	*	*	*		*	*	*	*			*	*	\$109.95
	MC-90	*					*								\$249.95
Filters 500Hz CW	YG-455C-1	std	*	*	*			*				*			\$149.95
	YG-88C-1	std	*	*	*		*	*							\$129.95
	YK-88CN-1	*			*		*	*							\$129.95
	YK-88SN-1	*			*		*	*							\$129.95
	YK-107C												*	*	\$129.95
Hi Stability Oscillator	SO-2	std			*		*	*					*	*	\$169.95
	SO-3											*			\$109.95
Headphones	HS-5	*	*	*	*	*	*	*	*	*		*			\$79.95
	HS-6	*	*	*	*	*	*	*	*	*		*			\$59.95
External Speaker	SP-31				*										\$99.95
	SP-50B						*		*	*		*	*	*	\$55.95
	SP-23						*	*				*			\$76.95
	SP-950	*													\$139.95
Voice Synthesizer	VS-2	*			*			*							\$69.95
	VS-3						*								\$39.95
Antenna Tuner	AT-50												*		\$309.95
Mobile Mount	MB-13												*	*	\$55.95
	MB-430						*	*	*	*					\$49.95
Power Supply	KSP-15	*	*	*	*	*	*	*	*	*	*	*	*	*	\$199.95
	PS-53						*	*				*	*	*	\$269.95
Voice Memory	DRU-2	*			*										\$134.95
	DRU-3A						*								\$129.95
	VG-1											*			\$69.95



# HF ACCESSORIES

## HF Mobile

HRO  
Discount Prices  
\$CALL

### TS-480HX TS-480SAT



#### Compact, Portable HF Transceiver

With its separate control panel, the TS-480 is perfect for base station use, while ample receive audio makes it outstanding for mobile applications. Using 13.8V for power, the TS-480HX delivers 200W; the TS-480SAT delivers 100W. The TS-480SAT also has an automatic antenna tuner.

- 500 kHz–60 MHz general coverage receiver.
- Separate LCD control panel with speaker. It can be positioned up to 4 meters from the main unit.
- TX / RX AF DSP. 16-bit AF digital signal processing offers noise reduction, TX / RX equalizer and AF filters.
- Optional IF filters available.
- TX covers all amateur bands 1.8 MHz to 60 MHz. Includes 5 MHz band for the US market.
- Quad-mixer provides RX dynamic range in the TS-950 class.
- PSK-31 compatibility.
- Packet cluster tune with optional TM-D700E/A.
- PC-based control.

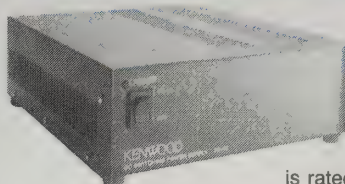
## Kenwood VHF Accessories

Option		Model	211A 411A	221A 321A 421A 521A	231A3 31A43 1A531 A	241A4 41A54 1A	251A4 51A55 1A	255A4 55A	261A4 61A	711A 811A	751A 851A	2530A2 550A25 70A	4100A	621A 721A	631A 731A	732A	733A	642A 742A	641A 741A	941A	V7A	HRO Price	
Microphone	Hand	MC-43S	*	*	*	*				*	*	*	*	*	*							\$59.95	
	Hand	MC-57DM			*	*																\$79.95	
	Hand	MC-58DM					*	*	std								*	std			std	\$79.95	
	Desk	MC-60A	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	\$139.95	
Modular Plug Adapt		MJ-88							*													\$32.95	
External Speaker		SP-50B	*	*	*	*			*		*	*	*	*	*	*			*	*	*	\$55.95	
Voice Synthesizer		VS-2											*									\$69.95	
		VS-3																			*	\$39.95	
Noise Filter Tone		PG-3B	*	*	*	*			*		*	*	*	*	*	*		*	*	*	*	\$29.95	
		TU-7									*	*	*						*	*	*	*	\$54.95
		KQT-8			*	*									*	*							\$49.95
		TSU-7															*		*	*	*		\$59.95
		TSU-8					*	*								*		*	*	*		\$59.95	
Mobile Mount		MB-201		*	*	*			*							*		*	*	*	*	\$25.95	
Power Cable		PG-2N	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	\$17.95	
Data Cable		PG-5A																			*	\$15.95	
Extension Cables		DFK-3C																*			*	\$44.95	
		13' 22'	DFK-4C																*		*	\$64.95	
		DFK-7C																	*		*	\$99.95	

## Power Supplies

### KPS-15

HRO  
Discount Price  
\$159.95



The KPS-15 switching power supply is rated at 23 amps and similar in size to the TS-50. The supply is for 110-230 VAC. Weighs only 4.5 pounds.  
**Suggested List Price \$229.95**

### KPS-15

The KPS-15 is a compact, switching power supply for high current applications. It is rated at 23 amps. The supply is for 110-230 VAC. Weighs only 4.5 pounds.

**HRO Price 229.95**

### PS-53

Designed for the TS-570 D/S(G), TS-480 series and TS-2000 operating all modes for the rated periods of time. Provides 13.8 VDC at 20.5 A. Has a cooling fan and protection circuits.  
**HRO Price \$269.95**

## Kenwood Power Cables

Part Number	Radio	HRO Price
PG-2Z	TS-140, 690, 790, 450, 850, 130, 440, 570	\$37.95
PG-2N	TM-2530/ 50/ 70, 721, 621A, 221/ 321/ 421, 241, 231/ 431/ 531, 251/ 451/ 551, 255/ 455, 261/ 461, 441, 201B, 401B, 541, 631, 642A, 731, 741, 941, 732A, 733A, 642A, 742A, 942A, TR-751A	\$17.95
PG-2W	TH-26, 46, 28, 48, 79, 235A	\$17.95
PG-2Y	TS-50S / 60S	\$39.95
PG-3J	TH-22AT, 26, 27, 46, 47, 79A, 235A, F6A	\$37.95



# KENWOOD

## DUAL BAND MOBILES

HRO  
Discount Price  
\$CALL

Super  
Special



**TM-G707A 2 m / 70 cm**

This dual bander has been specifically designed for ease of use while mobile. The extra large amber display has a four step dimmer for easy viewing in all lighting conditions.

- Simple operation. Programmable memory system stores five operating profiles with recall by pushing just one button.
- 180 memory channels with Memory Name Function which identifies each channel with up to 7 alphanumeric characters.
- Multiple scan functions include priority and CTCSS tone.
- Built-in duplexer.
- Memory shift for odd splits and auto repeater offset (2m).
- PC programmable w/ PG-4S.
- Built-in CTCSS encoder/decoder.
- Packet ready for 1200/9600 BPS packet including front panel connector.
- MC-53DM multi-function backlit mike with DTMF.
- Optional quick release detachable front panel.

**TM-V708A  
2 m / 70 cm**



- Full dual-band operation: VHF x VHF / UHF x UHF.
- Dual Receive.
- 200 memory channels with 8-character memory name input.
- Up to 10 programmable memory scan banks.
- Programmable memory (PM) available for selection/storage of 5 operation profiles.
- DCS code scan, TONE, CTCSS scan.
- Remote panel installation only (extension cable and panel holder supplied).
- Extra-large (188 x 54 dots) backlit LCD & multifunction key display (reversible).
- Visual band scope Advanced Intercept Point (VHF band).
- Key operation announcement with optional VS-3 voice synthesizer.

HRO  
Discount Price  
D700A \$CALL

**TM-D700A  
2 m / 70 cm**



Super  
Special

Kenwood continues to provide advanced APRS™ ham radio equipment in the TM-D700A mobile transceiver. For current owners of the TH-D7A handheld with built-in TNC and APRS™ software, the TM-D700A offers even more features and versatility. The TM-D700A is unlike any other dual-band mobile radio Kenwood has ever produced. The control head is detached and comes with remote cable for easy installation. The radio also incorporates a 9-pin PC connection for easy hook-up to program frequencies and other APRS™ mapping programs. Your TM-D700A is a full dual-band operation radio so VHF+VHF/VHF+UHF/UHF+UHF operation is possible. Full digipeater functions allow anyone to set up a digipeater location wherever needed to help fill in APRS™ nationwide network. Internet gateway operation is also possible for world-wide text communication over VHF.

- Output 50 W VHF; 35 W UHF.
- Receives 118-1300 MHz (cellular blocked).
- Full dual-band operation.
- Alphanumeric dot-matrix LCD amber display.
- Easy-to-use menu system.
- 200 memories.
- Built-in 1200 / 9600 bps TNC.
- Advanced APRS features.
- Satellite packet ready.
- PC programmable w/ PG-4S.
- Remote head installation only (kit included).
- DX packet cluster.
- Tone frequency scan.
- Visual scan.
- Backlite microphone with alphanumeric input.
- Wireless remote control.
- SkyCommand II control.
- SSTV control.
- Digital code squelch (DCS) with frequency ID scan.
- Digipeater operation.
- GPS / VC-H1 / PC port.
- Optional voice synthesizer.

### Single Band

**TM-271A**

**2 Meters**

**\$CALL HRO Discount Price**

On or off road, the TM-271A delivers powerful mobile performance with 60 W maximum output. The TM-271A is a tough, rugged unit meeting MIL-STD 810 C/D/E/F specifications. It features weather alert (US only), 200 memories plus call channel, multiple scan functions, CTCSS (42 subtones) and DCS (104 codes) encoder/decoder built-in, illuminated keys and large LCD with adjustable green backlighting, automatic repeater offset, memory channel lockout, memory control program.



### Kenwood VHF / UHF Specifications

Model	DC Power Supply	Current Drain		Output Power	Sensitivity	HRO Price
		Transmit	Receive			
TM-271A	13.8 V	13 A	1.2 A	60 W	<16 $\mu$ V	CALL
TM-G707A	13.8 V	11.5 A	1.2 A	50W/35W	<16 $\mu$ V	CALL
TM-V7A	13.8 V	11 A	0.6 A	50W/35W	<16 $\mu$ V	CALL
TM-D700A	13.8 V	11.5 A	1.0 A	50W/35W	<16 $\mu$ V	CALL
TM-V708A	13.8 V	11.5 A	1.0 A	50W/35W	<16 $\mu$ V	CALL



# HANDHELDS

## Single Band

HRO  
Discount Prices  
TH-K2AT  
\$CALL

### TH-K2AT 2m

Also  
TH-K2ATK2  
Drycell Version

Super  
Special



This 2-meter handheld is PC programmable.

- Priority scan.
- Large LCD panel & backlit keys.
- 5W RF output.
- Weather alert/RX.
- Automatic Simplex Checker.
- Auto repeater offset.
- Internal vox.
- Multiple scan functions.
- Built-in CTCSS, DCS and 1750 HZ tone burst.
- Meets MIL-STD-810 standards for resistance to rain, vibration, shock and humidity.
- High-gain antenna.
- More receive audio than most other handhelds on the market.

## Dual Band

### TH-D7A(G) With APRS Operation

Kenwood's deluxe dual band handheld has Automatic Packet Reporting System™ allowing you to track mobile stations on a map on a computer screen. The TH-D7A (G) includes a 1200 / 9600 built-in TNC and a program that deals with date formats supported by APRS. Its display shows information each time correct APRS data is received; you do not need a computer. Without a GPS receiver, you can manually enter your position. The HT has jacks to connect to your computer and to a GPS receiver.



- 2m / 440 MHz dual-band.
- Backlit keypad.
- Aircraft receive and dual receive on same VHF band for voice and data.
- Call channel and CTCSS.
- 3 scan modes and 200 memories.
- DX packet cluster monitor.
- Wireless remote control.
- 16 digit, 10 DTMF autodial memories.
- VC-H1 messaging control.
- Large (12 digits X 3 lines) dot-matrix LCD.

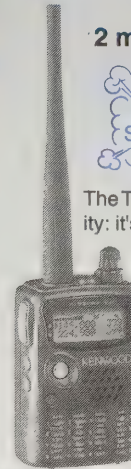
HRO  
Discount Prices  
TH-D7A(G)  
\$CALL

## Tri Band

### TH-F6A 2 m / 220 Mhz / 70 cm

Super  
Special

\$CALL  
HRO Price



The TH-F6A has a dual personality: it's a 3-band transceiver and also a wide-band (0.1-1300 MHz\*) receiver. In addition to FM / FMW / FMN / AM and SSB / CW, the receiver has a special weather channel mode.

It can receive 2 frequencies simultaneously, even on the same band.

The rig features 435 memories including 3 call channels and another 20 for programmable scan. The HT comes equipped with a 7.4 volt 1550 mAh lithium-ion battery providing 5 watts output. Ease of operation is achieved with a multi-scroll key that can be rocked up and down (frequency), left and right (band) with the thumb. Has a 16-key pad for direct entry, menu-driven interface, key illumination and backlit LCD display. Includes memory shift, key lock, time-out timer, wireless remote control.

\*Cellular frequencies blocked

## Handheld Battery Packs / Chargers

Battery	Voltage	Rating MAH	Desk Charger	Radio Series	HRO Price
PB-32	6	600	KSC-14	TH-22AT/ 42AT/79A	\$66.95
PB-33	6	1200	KSC-14	TH-22AT/ 42AT/79A	\$79.95
PB-34	9.6	600	KSC-14	TH-22AT/ 42AT/79A	\$89.95
PB-42L	7.4	1550	-	TH-F6A	\$79.95
PB-43N	7.2	1100	KSC-24	TH-K2AT	\$49.95

## Kenwood Handheld Options

Option	Model	K2AT	22AT 42AT	26AT 46AT	27AT 47AT	28A 48A 78A	25AT 45AT 75AT	77A	79A (D)	215AT 315AT 415AT	225A T	235	2600A 3600A	HRO Price
Headset	HMC-3	*	*	*	*		*	*	*	*	*	*		\$59.95
	EMC-3	*										*		\$29.95
	KHS-21	*												\$40.95
Speaker Mike	SMC-32	*	*	*	*	*	*	*	*	*	*	*	*	\$52.95
	SMC-33	*	*	*	*	*		*	*	*		*		\$65.95
	SMC-34	*	*	*	*	*		*	*			*		\$39.95
Prog. Tone Decoder	KQT-8						*							\$49.95
	TSU-7			*		std								\$59.95
	TSU-8		*											\$59.95
DC/DC Converter	PG-2W	*	*		*	*						*		\$17.95
Filtered Lighter Cord	PG-3J	*			*			*				*		\$37.95
Base Quick Charge	KSC-14		*						*			*		\$87.95
	KSC-24	*												\$59.95
Programming Cable	PG-4Y	*												\$34.95
Battery Case	BT-9		*						*					\$29.95
Wall Charger	BC-17		*											\$29.95
	BC-21	*												\$22.95

## Kenwood Handheld Specifications

Model	Freq Range	Power Supply	Power Out	Current Transmit	Current Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Discount Price
TH-K2AT	144-148 MHz	6-16 VDC	5 W	1.8 A	30 mA	<13 $\mu$ V	4.4 (11.2)	2.3 (5.8)	1.5 (3.5)	11.3 (320)	CALL
TH-F6A	144/220/440MHz	5-7.5VDC	5 W	2.0 A	35 mA	<13 $\mu$ V	3.4(8.7)	2.3(5.8)	1.2(3.0)	8.8 (250)	CALL
TH-D7A (G)	2m & 440 MHz	6 VDC	5 W	1.8 A	45 mA	<18 $\mu$ V	4.75(11.9)	2.25(5.4)	1.5(3.5)	12.0(340)	CALL

† Higher power output with optional batteries.





FT-DX9000 Contest Shown

## FT-DX9000 - \$CALL

The rebirth of  
the renowned FT DX series

The FT DX 9000 has the electronic DNA from the FT-1000D, but it has advanced far more than just one generation. The only HF/50 MHz transceiver capable of cross-band full duplex operation (for one-box SO2R contest operating), the identical dual receivers feature unmatched real-world, close-in dynamic range, selectable (15/6/3 kHz) roofing filters, and superb filtering thanks to the 32-bit IF DSP. On transmit, the industry's only 3-band parametric microphone equalizer yields superb SSB audio, and the FT DX 9000D's TFT display provides a two-band spectrum scope, world clock with sunrise/sunset illumination, rotator control page for Yaesu G-800/1000/2800DXA rotators, an audio scope/oscilloscope page with waterfall display, and much, more. Three FT DX 9000 configurations are available:

**FT-DX 9000MP** - 400 Watts output; external switching power supply with twin speakers and audio filters; LCD display plus four analog meters; flash memory card to store configuration and log data; full dual receive (identical receivers) for SO2R; and main and sub receiver VRF preselectors.

**FT-DX 9000D** - 200 Watts output; 6.5" TFT display plus two analog meters; flash memory card for configuration and logging data; Very-High-Q "μ-Tune" narrow-band preselector modules for 160-20 M (main receiver) plus VRF for both receivers; full dual receive for SO2R; internal switching supply.

**FT-DX 9000 Contest** - 200 Watts output; LCD display plus four analog meters; single receiver with VRF; internal switching supply; extra key and headphone jacks. Second RX, VRF/μ-Tune modules, and data management unit (to enable external monitor) are optional and may be added.

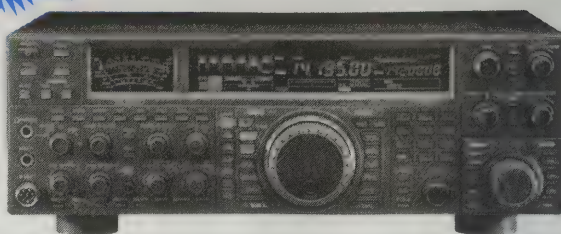
- HF + 50 MHz.
- Four TX / RX antenna jacks; two RX in / out BNC jacks; one SO239 RX antenna jack.
- PS/2 & USB keyboard connectors.
- Data port for PC connection.
- Direct frequency entry.
- One-touch band change.
- Direct input/output sound card connections.

- One-touch "Narrow" DSP filter selection.
- Class-A with continuous A1AB bias control.
- Rotator interface jack for direction indication and control (TFT-equipped models).
- Order rig from HRO; add options for direct shipment from Yaesu/Vertex Standard headquarters after performance verification at factory.

**Call Toll Free for Quotes**



## FT-2000 HF / 50 MHz Transceiver



The FT-2000 is the 2nd Generation in the proud lineage of the FTdx9000 Series! Featuring extensive DSP filtering, 100 Watts of power output, and a host of outstanding ergonomic and performance features, the FT-2000 is destined to be the centerpiece of your HF / 50 MHz station.

- Provides a full 100 Watts of power output (AM: 25 W) on the 160-6 m amateur bands. U.S. version includes a special memory bank containing the five 60-meter channels, continuous receiver coverage from 30 kHz to 60 MHz.
- Receiver front end includes VRF (variable RF tuning) preselector and optional u-tuning for low bands available.
- Variable SSB bandwidth capability. Default bandwidth is 2.4 kHz (300-2400 Hz @ -6 dB). Other selections are 50-3000 Hz, 100-2900 Hz, 200 - 2800 Hz, and 400-2600 Hz.
- First IF roofing filters included.
- Strong receiver design provides wide dynamic range and high intercept point.
- Dual receive in same band.
- Wide array of IF-DSP interference rejection filters.
- External display port for viewing of RF scope, audio scope, and X-Y oscilloscope displays. (Requires data management unit and external display.)
- Five-group, 99 channel memory with 5 channel quick memory bank.
- A host of CW features.
- Unique receiver configuration display

## Portable All-Mode

### All Mode FT-897D

\$CALL - HRO Discount Price

**HF + 6m + 2m +70cm**

**Now with TXCO Built-in**

The innovative FT-897 rugged multiband portable transceiver covers the 160-10 meter bands (now includes 60m) plus 6m, 2m and 70 cm. All mode operation includes SSB, CW, AM, FM and digital. With the internal batteries (optional) it will produce 20 watts out. With an external 13.8 volt DC supply it will produce 100 watts out.



- 200 memory channels with alphanumeric tags.
- ATAS-120/100 compatible.
- Digital signal processing built-in.
- Bolt-on FC-30 automatic antenna tuner optional.
- IF shift control.
- IF noise blanker.
- AGC selector (auto / fast / slow / off).
- VOX operation
- CTCSS / DCS encoders / decoders built-in.
- Collins® 2.3 kHz SSB mechanical filter and 500 Hz CW filter (optional).
- Built-in 3 message memory keyer with adjustable pitch control.

- Automatic repeater shift.
- Smart Search™.
- Spectrum scope.
- Automatic beacon mode.

### Accessories:

- **FNB-78** internal 4.5 Ah ni-MH battery **\$119.95**
- **FC-30** antenna tuner **\$249.95**
- **FP-30** internal power supply **\$219.95**
- **CD-24** 4-hour charge adapter for FNB-78 **\$119.95**
- **PA26B** charger for CD-24 **\$85.95**
- **ATAS-120** active tuning antenna **\$349.95**
- **MMB-80** mounting bracket **\$35.95**



# HF TRANSCEIVERS

## Compact HF Transceiver with DSP

**NEW!**



**FT-450**

**\$CALL**

HRO Discount Price

The FT-450 is a super compact HF transceiver with DSP. It is just 9" (W) X 3.3" (H) X 8.5" (D) weighing only 7.9 pounds. It transmits on the HF bands plus 6 meters. It has an easy to read 9-segment LCD display. DSP modulation / demodulation, microphone equalizer with speech processor, VOX operation. Other features

include: 2 voice memory channels, TCXO, 500 memory channels, IF shift, clarifier, electronic built-in keyer, FSK-RTTY operation, long wire antenna usage with optional FC-40.

## The Smallest HF + 6m + 2m + 70cm

### Optional Remote Head

**FT-857D**

**\$CALL**

HRO Discount Price

Now with DSP-2 built-in



The world's smallest HF/ VHF / UHF mobile transceiver provides base station performance from an ultra-compact package. The convenience of remote-head operation (optional YSK-857 separation kit) makes the FT-857 ideal for mobile or portable work.

The power amplifier uses bipolar transistor devices for low noise, low distortion and high reliability. Has an extensive cooling system with a thermostatically-controlled fan and aluminium die cast chassis.

The receiver front-end has a very low noise floor and wide dynamic range. Features a double conversion superheterodyne system (single on WFM) with the second IF at 455 kHz; bandpass filtering, device selection and gain distribution for strong signals. On VHF and UHF, the very low noise MOSFET preamplifier and active DBM mixer for working weak signals and rejecting intermodulation.

- Receive coverage 100 kHz to 56 MHz, 76-108 MHz, 420-470 MHz. Includes 60m.
- Transmits 160-6m, 144-148 MHz, 430-450 MHz and 5167.5 kHz (Alaska emergency frequency on USA version).
- SSB, CW, AM, FM, packet (1200 / 9600 bps) operation.
- Power out: 100 W (160-6 m), 50 W (2 m), 20 W (70 cm).
- DSP bandpass filter, DSP auto-notch filter, DSP noise reduction, mike equalizer.
- VHF / UHF features: versatile tone control selections, automatic repeater shift, Smart Search™, Spectrum Scope and ATS™.
- Easy-to-use "Scrolling Front Panel" keys allow adjustment of several transceiver functions during use.

- DXer features: IF shift, IF noise blanker, intercept point optimization, adjustable AGC, RIT. RF gain control, and VOX.
- CW features: built-in electronic keyer, CW message memory with beacon mode, CW pitch / sidetone control, and CW trainer.
- Easy data mode for operation on 1200 / 9600 bps FM packet, RTTY, SSTV or PSK31. Rear panel 6-pin mini-DIM connector for each connection of these modes.
- Memory system: 200 main memories, 8 character alphanumeric labels. 10 groups with 20 memories each. "Quick Memory" and "Home Channel" for each band.
- Large multi-color display.
- Battery voltage meter, TX meter selection, two antenna connectors, TX / RX status LEDs, versatile scanning features. auto power off, time out timer and CAT system.

### Options include:

- **ATAS-120:** Active Tuning Antenna System for mobile, portable or apartment / balcony use. Designed for use on the 7 / 14 / 21 / 18 MHz amateur bands. Can be used fully retracted on the 50 / 144 / 430 MHz bands. **HRO Price \$349.95**
- **Collins® Mechanical Filters:**
- **YF-122S** 2.3 kHz SSB
- **YF-122C** 500Hz CW
- **YF-122CN** 300Hz CW **HRO Price each \$169.95**
- **YSK-857** Separation Kit **HRO Price \$169.95**
- **TCXO-9** High Stability Reference Oscillator. **HRO Price \$95.95**

## 5 Watt Backpack HF Plus

Now with FNB-85 battery  
1400 mah NiMH  
+ NC-72B Charger



**FT-817ND**

**\$CALL**

HRO Discount Price



- Product concept: fully self-contained battery-powered low-power amateur transceiver for portable, camping, or mountain use. Includes 60m.
- Transmits on: 160-10 m, \*50 / 144 / 430-450 MHz, plus Alaska Emergency Channel (5167.5 kHz).
- Receives: 100kHz-56 MHz; 76-154 MHz; 420-470 MHz. (Exact frequency range may be slightly different.)
- Operating modes: USB, LSB, CW, AM, FM, WFM, digital (AFSK), packet (1200 / 9600 FM).
- Power output: 5 watts SSB / CW / FM with 13.8V external DC; 1.5 W AM carrier; 2.5 WSSB / CW / FM with 9.6V Ni-Cd Pack or 8 "AA" batteries (AM: 0.7 W); up to 5 W SSB / CW / FM power (maximum) programmable via menu on Ni-Cd / AA cells.

## 10m / 6m / 2m / 70cm FM

**FT-8900R**

**\$CALL**

HRO Price

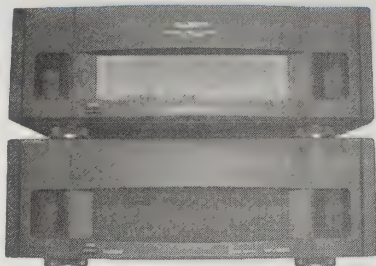


The FT-8900 combines "traditional" 2m / 70cm local communications with the exciting capability of Sporadic-E or F2 DX on the 10m and 6m bands, allowing nationwide FM communication.

- Covers 28-29.7 / 50-54 / 108-180 / 320-480 MHz and 700-985 MHz (cellular blocked and non-restorable).
- Independent 2-channel, dual-receive, full duplex.
- High power output with 50 watts on 10m / 6m / 2m and 35 on 70cm.
- Large, easy-to-read LCD display.
- Built-in duplexer.
- More than 800 memory channels. 799 "regular," 6 "home," 5 sets of band edge, and 6 "Hyper Memories."
- Cross-band repeater capability.
- Versatile scanning.
- CTCSS / DCS built-in.
- User-programmable mike keys.
- Remote head mounting with optional YSK-800.



## HF Amp & Power Supply



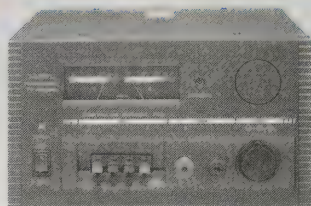
### Quadra System

**HRO  
Discount Price  
\$3999.95**

Here's all the linear amplifier you should need for operation on both HF (160 - 15 meters) and 6 meters. It is designed for automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990 and the FT-900 HF radios. The amp features 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC.

The separate power supply, the VP-1000 allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is 500 watts on HF. The amplifier comes with a built-in high speed antenna tuner. It has four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

## Power Supplies



**FP-1030A  
\$239.95**

HRO Prices

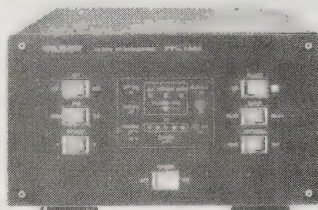
**FP-1023A (not shown) \$149.95**

Yaesu's two low profile switching powers supplies operate on 110 or 220 VAC. The FP-1023A has 23 amps continuous and 25 intermittent. The FP-1030A is 25 amps and has meters.

## For the FT-1000 MP Mark V

### 50 MHz Transverter FTV-1000

for FT-1000MP Mark V



The FTV-1000 uses high performance MOSFET transistors to provide 200 watts at 50 MHz. The unit runs cool with extensive heat sinking and cross-flow cooling fan. It features exclusive Class-A bias capability. When selected, output power is reduced to 50 watts. Class-A operation provides the best signal on 6 meters.

The receive section follows the same design as the FT-1000MP Mark V. It has a low noise pre-amp with two gain selections. For local work, these preamps may be bypassed. HRO Discount Price: \$CALL SPECIAL

## Microphones

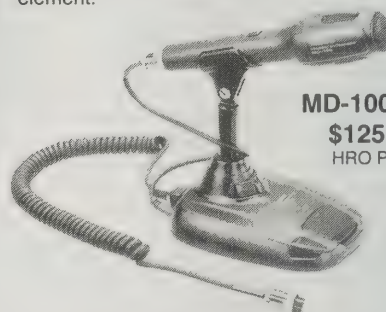
### MD-200 A8X

**\$379.00  
HRO Price**



The MD-200A8X is a stylish, high-quality desk microphone designed for base station use with the latest generation of Yaesu transceivers. (It is fully compatible with the FT-1000MPMKV, FT-1000MP, FT-920, FT-900C/ATC, FT-847, and FT-817. CT-69 adapter required for use with the FT-100/100D.)

Features a studio-quality polyethylene teraphthalate film dynamic element optimized for SSB operation. The variable side pressure control allows the operator to adjust the frequency response of the mike from totally flat to high-articulation. Provision for incorporating user supplied mike element with a switch to select between the standard and user element.



### MD-100 A8X

**\$125.95  
HRO Price**

This desk microphone features selectable low-cut filtering and high-emphasis active filtering that allow you to tailor the microphone response for optimum voice clarity or DX punch. It has a large push-to-talk switch and latching button, along with a large rotary up/down, slow/fast control for scanning.

The MD-100a8x is especially designed for the FT-1000MP and the FT-900, but can be used with the following Yaesu HF transceivers: FT-747GX, FT-757GXII, FT-890, FT-840, and FT-1000.

## Yaesu HF Specifications

Model	Frequency Range	Power Supply		Current Drain		Power Output				Mike ohms	Receive Circuitry	Sensitivity†	RIT/XIT Range	Audio Output	HRO Price
		AC	DC	Xmit	Rec	AM	FM	SSB	CW						
FTDX9000MP	30KHz-60MHz	117		9 A		100 W	400 W	400 W	400 W	200-10K	Triple	< .2 µV	±9.99 kHz	2.5W	CALL
FTDX9000D				6.5 A		75 W	400 W	200 W	200 W	200-10K	Triple	< .2 µV	±9.99 kHz	2.5W	CALL
FTDX9000Contest				6.5 A		75 W	400 W	200 W	200 W	200-10K	Triple	< .2 µV	±9.99 kHz	2.5W	CALL
FT-897D	100 kHz - 30 MHz 50-54 MHz 144-148 MHz 430-450 MHz	117/230	13.8 VDC	23 A	1 A	20 W (batt)* 100 W+	20 W (batt)* 100 W +50 W@ 20 W%	20 W (batt)* 100 W +50 W@ 20 W%	20 W (batt)* 100 W+	200-10K	Double	< .2 µV	±9.99 kHz	2.5W	CALL
FT-817ND	100 kHz - 56 MHz 76 - 154 MHz 420 - 470 MHz		13.8 VDC	2 A	450 mA	1.5 W	5 W	5 W	5 W	200-10K	Double	< .25 µV	±9.99 kHz	1.0W	CALL
FT-857D	See page 21		13.8 VDC	22 A	1 A	25 W 12.5 W 2m 5 W 70cm	100 W 50 W 2m 20 W 70cm	100 W 50 W 2m 20 W 70cm	100 W 50 W 2m 20 W 70cm	200-10K	Double	< .2 µV	±9.99 kHz	2.5W	CALL
FT-450D	HF + 6m		13.8 VDC					100 W	100 W	200-10K			±9.99 kHz		CALL

† Sensitivity measurements for 1.8-30 MHz SSB, CW \*Optional module required @2m %70cm \*HF-6M battery +HF-6M AC/13.8VDC



# INTERNET LINKING

# RECEIVERS

## Wires-II



### HRI-100 Interface Box

Give your repeater  
worldwide coverage  
with the Wires-II Internet  
repeater enhancement system

Wires™-II uses DTMF signaling to establish a bridge via the Internet from your repeater or home station to another Wires™-II equipped station anywhere in the world. No proprietary tones are used, so any manufacturer's radio (equipped with a DTMF encoding keypad) may be used to bring up the Internet link.

At the repeater site, a PC is connected to the HRI-100 Wires™-II interface box which serves as a command and audio-patching controller. Use either a dial-up or high-speed line for Internet connection.

Wires™-II may be configured to allow on-the-fly selection for linked or non-linked communications. Wires™-II uses voice recording technology as a buffer and will never interrupt a conversation in progress on a distant repeater.

Wires™-II provides two operating network concepts. Up to 10 repeaters and/or home stations may join to form a "Sister Radio Group" for closed network operation. The Wires™-II server also maintains a worldwide listing of repeaters operating in the "Friends' Radio Group" mode that may be contacted using a 6 digit DTMF string to establish a link.

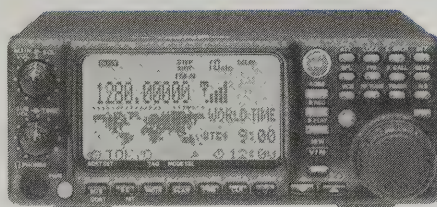
#### The Wires™-II kit includes:

AP01 CD-ROM, power cable, data cable (RS-232 DB-9 plug), data cable (8-pin mini-DIN plug), two audio cables (3.5 mm plug) and the Wires™-II user / server agreement.  
**HRO Price \$149.95**

#### Linking system requirements are:

- Wires™-II kit.
- Transceiver or repeater (with standard PKT jack recommended).
- Intel® MMX 200 MHz or faster processor.
- Internet connection (56 kbps modem if dial-up connection is used).
- Microsoft® Windows® 98 SE or later operating system.
- 30 MB of available hard disk space, 64 MB or more of RAM, CD-ROM drive for installation, 640 x 480 color display with 256-bit color support.
- Sound card with 44.1 kHz sampling rate (some sound cards may not work).

## SWL Receivers



### VR-5000

**\$599.95**

HRO Discount Price

This multimode desktop scanning receiver has continuous frequency coverage from 100 kHz to 2.6 GHz (cellular frequencies are blocked and non-restorable). Features direct keypad entry and a wide variety of scanning capabilities.

The 2000 memory channels may be separated into as many as 100 memory banks. Memory banks and memory channels may have alphanumeric labels. Sort channels by frequency, alphanumeric name or operating mode. Special pre-loaded bank of most popular shortwave broadcast stations. List may be user edited.

Built-in world clock. Dual receive, band scope graphical activity monitor, field strength meter, audio waveform meter, "Smart Search™" memory loading feature. Optional DSP-1 digital signal processor, DVS-4 digital voice recording unit and FVS-1 voice synthesizer.

## Programming Kits

### To Program Handhelds:

**ADMS-1E (\$38.95)**

FT-10/ 40/ 11/ 41/ 50/ 51

VX-1R / VX-5R

**ADMS-1F (\$38.95)**

VX-110 / VX-150

**ADMS-1G (\$38.95) VX-7R**

**ADMS-1H (\$38.95) VX-2R**

**ADMS-1J (\$38.95) FT-60R**

### To Program Mobiles:

**ADMS-2D (\$39.95)**

FT-3000 / 8000 / 8100 / 8500

**ADMS-2E (\$39.95)**

FT-90R / 2600M

**ADMS-2F (\$38.95)**

FT-1500M

**ADMS-2H (\$48.95) FT-8900**

**ADMS-2I (\$48.95) FT-8800**

**ADMS-2J (\$48.95) FT-280\$0**

**ADMS-2K (\$48.95) FT-7800**

### To Program a Receiver:

**ADMS-3 (\$38.95) VR-500**



### VR-500

**\$CALL**

HRO Discount Price



This high performance miniature communications receiver provides general coverage reception from 100 kHz to 1300 MHz on CW, SSB (LSB and USB), AM and FM (wide and narrow).

- Receives 0.1 to 1300 MHz (cellular blocked).
- Dual watch.
- Band scope.
- 8 character alpha numeric display.
- 1000 memory channels, skip memory 100 channels, 10 channel search band, 10 channel dual receive, one priority channel.

## Communications Receiver



### VR-120D with 12v input \$CALL



For professional-grade monitoring in the field, the VR-120 provides wide band coverage from 0.1 to 1299.996 MHz in AM / FW / Wide-FM modes (cellular and other restricted frequencies blocked). The receiver is constructed with a durable, high-impact polycarbonate case and is water resistant to survive the rigors of outdoor use. The VR-120 low current consumption and can provide up to 20 hours of use on a pair of "AA" batteries.

- Listen to the short-wave broadcasts from around the world.
- Simple one-touch memories.
- Front-end attenuator.

- Special bank of 12 preset mode memories.
- Wide selection of scanning modes.
- Cloning capability to other VR-120's.
- BNC type antenna connector.



## 2m Mobiles

### FT-2800M 2 meters \$CALL



The FT-2800M, the most ruggedly built 2m amateur transceiver ever, provides 65 watts of power along with Yaesu's bullet-proof receiver front end. Direct keypad frequency entry, alphanumeric memory system, high power output and unsurpassed ergonomics make the transceiver an operator's dream come true.

- 65 watts output with 4 selectable power output levels (65/25/10/5 watts). Power levels may be stored in memory.
- Extensive memory system provides a total of 221 memory channels including 200 regular memories, 10 pairs of band-limit memories, and an instant recall "Home" channel. Memories store repeater shift, CTCSS / DCS data, power level, scanning status, and alphanumeric labels.
- CTCSS and DCS encode / decode built in.
- Versatile scanning capability include a choice of scanning / resume options.

Scans memories, VFO or a limited VFO sub-band.

- Wide / narrow deviation selection.
- Weather channels with "severe weather" alert.
- Smart Search™ may be used to automatically load a special bank of 31 memories based on activity.
- Wires™-II internet linking access feature. (Optional Wires™-II Kit required.)
- Multi-function LCD display shows memory channels, alphanumeric label.
- HM-48A6J DTMF direct access microphone allows direct keypad frequency entry and other controls.
- RF-level squelch and dual watch.
- Interactive programming menu.
- Supply voltage display.
- Also: time out timer, auto power off, auto repeater shift, 4-level display dimmer.

### FT-1802M 2 m + extended receive \$CALL - HRO Price



The FT-1802M brings you Yaesu's legendary mechanical toughness along with outstanding receiver performance and crisp, clean audio. It has a rugged die-cast chassis that will withstand the roughest conditions. It covers the 2 meter band with extended receiver range of 136-174 MHz. Power output is 50 Watts with four selectable ranges (50 / 25 / 10 / 5 watts).

- Keyboard frequency entry from the microphone.
- Four user-programmable "soft" keys on the microphone.
- Wires™ VoIP internet linking capability.
- Illuminated front panel keys for night time use.
- 221 memory channels with alpha-numeric labeling.
- Eight memory banks for organizing memory channels.
- WX channels with "Severe Weather" alert (USA only).

- Adjustable microphone gain and wide / narrow deviation & RX bandwidth.
- Built-in CTCSS / DCS encoder / decoder.
- Enhanced paging and code squelch system.
- CW trainer to practice Morse code.
- Security password helps prevent unauthorized use.
- Automatic repeater shift.
- Dual watch.
- Advanced track tuning for intermod rejection.
- Multiple scanning modes.

## 2m / 440 MHz Dual Band



### FT-7800R \$CALL - HRO Price

The FT-7800R is designed for simplicity of operation along with high performance in the receiver section. It is the ideal rig for the active Ham who has a need for simplex, repeater, or FM satellite operation on both bands, but without the complication of cross-band repeat capability.

- NOAA Weather Alert (U.S. Version only).
- More than 1000 memory channels, each capable of storing a 6-character alpha-numeric label.
- WiRES™ internet linking capability.
- YSK-7800 remote mounting kit (option).
- One-touch "Hyper Memory" operation.
- High power output - 50 Watts of power output on 144 MHz and 40 Watts on 430 MHz.

### FT-8800R \$CALL - HRO Price



The FT-8800R provides easy operation, outstanding receiver performance and crossband repeat capability.

- Wide receiver frequency coverage of public safety, commercial, aircraft and government communications.
- Independent two channel operation operates as two radios in one.
- Large LCD display.
- High power output with 50 Watts on 2m; 35 on UHF.
- Over 1000 memory channels with 512 regular memories on each band.
- One-touch Band-Pattern.
- CTCSS and DCS tone systems.
- User-programmable microphone keys.
- Convenient remote-head mounting capability with the optional YSK-8900 separation kit.

## DC Noise Filter

### LF-1

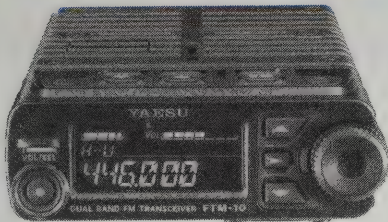
\$26.95 - HRO Price

Especially designed for mobile use, consists of a heavy choke coil to suppress alternator DC line noise.



# HANDHELDS

## Dual Band Mobile



### FTM-10R \$CALL

The FTM-10R is a New Concept mobile rig. It can be mounted most anywhere using the separate front panel. The front panel has magnets allowing installation without screws in many cases.

PTT switch on the front panel allows transmission without connecting any microphone. Mobile bracket allows for easy fixing and releasing the radio.

- 50 W on 2 m and 40 W on 70 cm.
- Wide receiving capability and independent AM / FM broadcast receiver.
- Loud audio external speaker (optional MEK-200-M10) and Bluetooth unit for hands-free operation.
- High brightness and ocean blue color LCD display.
- Large aluminum die cast chassis.
- Waterproof front panel.
- Great for the motor sports scene. PA function, intercom function, VOX.
- Line input can be connected to listen to external audio devices.
- Message transfer function..
- Wireless clone feature and WIRES.
- Lap counter, interval timer / alert, clock and date display.

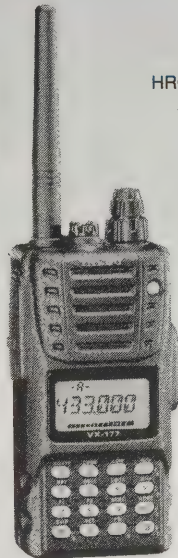
## Single Band

### VX-127 8 Keys

**\$159.95**  
HRO Discount Price

### VX-177 16 Keys

**\$169.95**  
HRO Discount Price



These compact, high performance FM handhelds provide up to 5 watts RF power and a wealth of convenient features for the 440 MHz amateur band. These units provide high battery capacity (1400 mAh) and outstanding audio output (700 mW). The display is the same as on the VX-120 / 170 with high visibility and clear information. The 8-key VX-127 provides the ultimate in simple operation, while the 16-key VX-177 provides a full 4-column DTMF pad along with direct frequency entry.

The rigs have enhanced paging and code squelch that allows you to page a particular station and only receive calls from that station. You have one-touch access to the Yaesu Wires™-II VOIP internet linking system. Receiver frequency coverage is 420-470 MHz and has it has 1000 memory channels, CTCSS/DCS encode / decode. Units are rugged, submersible to IPX7 specifications.

### VX-170 16 Keys

### VX-120 8 Keys

**\$CALL**  
HRO Discount Price



- TX: 144-148 MHz; RX: 137-174 MHz.
- 5 watts with power levels hi/ med/ low.
- Cloning.
- Dual watch.
- ARTS.
- IPX7 submersible 30 min. @ 3 ft.
- 200 memory channels.
- CTCSS/DCS included.
- Direct keypad entry (VX-170).
- Smart search memories.



### VX-150 16 Keys

### VX-110 8 Keys



- CTCSS/DCS.
- TX: 144-148 MHz; RX: 140-174 MHz.
- 5 watts with power levels hi/ med/ low.
- Direct keypad entry.
- 209 memory channels.
- 7 character alphanumeric display.
- Optional ADMS-1F.
- Smart Search™ auto memory loading.
- ARTS system.

## Radio Cases for Yaesu Handhelds

Cases are available for Yaesu handheld radios. Contact your closest HRO store or call one of the toll free numbers for information on the case that matches your HT. Several options match the various radios and the battery packs that are used.

### Yaesu Handheld Batteries and Chargers

Battery	Voltage VDC	Rating mAh	Wall Charger	Desk Charger	Radio Series	HRO Price Battery Only
FNB-12S	12	600	NC-18	NC-50	FT-23/33/73/411/470	\$71.95
FNB-17	7.2	600	NC-28	NC-50	FT-23/33/73/411/470	\$52.95
FNB-27	12	600	NC-18B	NC-50	FT-26/76/415/416/530/815/816	\$62.95
FNB-41	9.6	600	NC-60	NC-50	FT-10R/40R	\$58.95
FNB-42	9.6	1100	NC-60	NC-50	FT-10R/40R	\$62.95
FNB-52LI	3.6		NC-66		VX-1R	\$36.95
FNB-64	7.2	700	NC-73B		VX-110/150	\$43.95
FNB-80LI	7.4	1300		CD15A	VX-7R	CALL
FNB-83	7.2	1400	NC-88	CD26	VX-120/170/127/177	CALL

## Charger Adapters

### NC-50 Charger Adapters

Yaesu's NC-50 quick charger supports most Yaesu handheld batteries. An appropriate adapter is required. Adapters and batteries supported are shown in the table.

Model	Batteries Supported	HRO Price
CA-7	FNB-12 / 14 / 17	\$22.95
CA-8	FNB-25 / 26 / 27	\$27.95
CA-10	FNB-31 / 33 / 38	\$14.95
CA-14	FNB-40 / 41 / 42	\$25.95
CD-26	FNB-83	CALL
VAC-370	FNB-83	CALL



## Dual Band

### VX-2R 2 m / 70 cm

**\$CALL** - HRO Discount Price

The world's smallest dual-band HT has up to 1.5 W of output power. It's your gateway to VHF, UHF, shortwave broadcast, marine and aircraft bands or Wires™ Internet linking.

- Covers 500 kHz to 999 MHz (cellular blocked).
- Over 1300 memories.
- Dual channel "priority" operation.
- VOX (optional VC-25 headset required).
- 3 watts out on 2m (2 on 70cm) with optional E-DC-21 DC adapter cable.
- Multiple scanning functions.
- RF squelch only.
- Cloning between two VX-2 series.
- Narrow / wide deviation setting.
- ARTS™ auto-range transponder system.
- Automatic repeater shift.
- Channel counter searches.
- Busy channel lock-out.
- DC voltage meter.

### FT-60R

2 m / 70 cm

**Extensive Receive Frequency Coverage**

**Emergency Automatic ID for Search & Rescue**

Receives 108-520 MHz and 700-999 MHz (cellular blocked) for monitoring amateur, public safety, business, marine, aircraft, government communications.

- Tough die-cast, water resistant construction.
- 1000 memories w/alphanumeric labels.
- 10 memory banks.
- 5 Watt output.
- CTCSS and DCS (encode/decode) with split tone; DCS encode only capable.
- One-touch to NOAA.
- Nine DTMF auto-dial memories.
- WIRES™ Internet linking.
- Huge LCD display.

- ARTS™.
- Tough die-cast, water resistant construction.
- Two front panel programmable keys.
- Automatic repeater shift.

**Call  
Toll-Free for  
Up-to-Date  
Prices**

## Tri-Band

### VX-6R 2m / 220 Mhz / 70 cm

**\$CALL**

HRO Discount Price

The VX-6R is an easy-to-use little brother to the VX-7R, and is both submersible (JIS7: 30 minutes of submersion at depth of 3 feet) and rugged.

- Covers 504 kHz to 998.99 MHz (with cellular blocked).
- 5 Watts of power 144 and 440 MHz bands (1.5 W on 222 MHz).

- FNB-80LI 1400 mAh lithium-ion battery pack standard.
- Emergency automatic ID (EAI) system.
- Enhanced paging and code squelch (EPCS).
- Wake-up battery saver.
- Security password.
- 900 memory channels with alpha-numeric labels.
- One-touch memory access.
- CW trainer.
- Compact package measuring just 2.3" x 3.5" x 1.1" WHD.
- Oversized volume and squelch knobs.

## Quad-Band

### VX-7R 2 m / 220 MHz / 70 cm / 6m

**VX-7RB**

(Black color same specs)

**\$CALL**

HRO Discount Price

The world's first submersible amateur handheld has true dual receive. Output is 5 Watts on 6m / 144 / 440 MHz; 300 mW on 220 MHz.

- Covers 500 kHz to 999 MHz, cellular blocked.
- Over 900 memories.
- Dual receive V-V, U-U, V-U.
- WIRES compatible.
- CTCSS/DCS encoders/decoders built-in.
- 256 color status indicator strobe LCD.
- Submersible (3 feet for 30 minutes).
- ARTS capable.
- "Split-tone" capability including DCS encode-only.
- 7.4 volt 1300 mAh lithium ion battery.
- "Quick-draw" swivel-mount belt clip.
- 24 hour clock.
- Spectrum scope display.

## Yaesu Handhelds

Model	Frequency	Mode	Pwr Supply	Power Out	Current Transmit	Drain Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Price
FT-60R	2m/70 cm	FM	7.2 VDC	5 W	1.5 A	125 mA	.16 µV / 12dB	4.3 (10.9)	2.3 (5.8)	1.2 (3.0)	13.5(370)	CALL
VX-2R	.5- 999 MHz@	FM	3.6 VDC	1.5W††	500 mA	150 mA	.16 µV / 12dB	3.2 (8.1)	1.9 (4.7)	1 (2.5)	4(125)	CALL
VX-6R	.504- 999 MHz@	FM		5 W***				3.4 (8.7)	2.3 (5.8)	1.1 (2.8)		CALL
VX-7R	50/144/440MHz	FM/AM	7.4 VDC	5 W †	1.6/1.7/1.4 A	150mA	.16 µV / 12dB	3.4 (8.7)	2.3 (5.8)	1.1 (2.8)	8.9(255)	CALL
VX-110	144-148 MHz#	FM	7.2 VDC	5 W	1.3 A	130mA	.16 µV / 12dB	4.2 (10.8)	2.3 (5.8)	1.1 (2.65)	11.5 (325)	CALL
VX-120/170	144-148 MHz#	FM	7.2 VDC	5 W	1.5 A	125mA	.16 µV / 12dB	4.7 (12.0)	2.4 (6.0)	1.3 (3.2)	13.5 (390)	CALL
VX-127/177	70cm#	FM	7.2 VDC	5 W				4.2 (10.8)	2.3 (5.8)	1.1 (2.65)	11.5 (325)	CALL
VX-150	144-148 MHz#	FM	7.2 VDC	5 W	1.3 A	130mA	.16 µV / 12dB	4.2 (10.8)	2.3 (5.8)	1.1 (2.65)	11.5 (325)	CALL

\*Power output can be increased depending on the battery pack selected. #Extended Rx range @Cell phone blocked. \*\*2 and 6m 4.5 W UHF. †300 mW on 22- MHz. ††1.5 W 2m/1 W UHF. \*\*\* 1.5 W on 220 MHz



# HT ACCESSORIES

Accessory	Model	10R 40R 50 R	60R	11 41	51R	23R 33R 73R	26 76	209R H	103R 203R 703R	411 811 911	415 815	416 816	470	530	VX-1R	VX-2R	VX-5R	VX-7R	VXF-1 VXF-10 VX-150	VX- 120/170 VX- 127/177	HRO Discount Price
Headset/Boom Mike	YH-2					*	*	*	*	*	*	*	*	*							\$30.95
Microphone Adapter	CT-44		*																		\$14.95
VOX Headset	VC-25		*												*		*		*		\$84.00
Speaker/Mike	MH-32			*		*	*	*	*	*	*	*	*	*							\$30.95
Speaker/Mike	MH-34B4B	*	*																		\$38.50
Speaker/Mike	MH-30C2B			*		*				*							*				\$45.95
Speaker/mike w/ear jack	MH-35A2B			*																	\$35.95
Speaker/Mike	MH-57A4B																	*	*		\$30.95
Speaker/Mike waterproof	CMP-460A																	*	*		\$69.95
Ear Piece Mike	MH-37A4B		*														*		*		\$40.00
Ear Piece Mike	MH37B2B	*		*	*	*	*	*	*	*	*	*	*	*	*				*		\$30.95
Ear Piece Mike	VC-27																	*	*		\$30.95
Ear Phone	FEP-10	*													*						\$9.95
Microphone adapter	CT-91																	*	*		\$10.95
DC/DC adapter	PA-6					*				*			*								\$30.95
DC/DC cigar adapter	EDC-5B	*	*				*				*	*		*			*	*		*	\$26.95
DC/DC adapter	EDC-6	*	*														*	*		*	\$7.95
DC Adpt w/Trickle Charger	EDC-12			*																	\$38.95
DC/DC adapter	EDC-15														*				*		\$38.95
Wall Charger 117 VAC	NC-28B					*	*			std	std	std	std	std							\$14.95
Wall Charger 110 VAC	NC-34B						*														\$14.95
Wall Charger 117 VAC	NC-60B	*																			\$16.95
Wall Charger 117 VAC	NC-66B														*			*			\$18.95
Wall Charger 117 VAC	NC-72B																*				\$18.95
Wall Charger 117 VAC	NC-88B		*																		\$24.00
Wall Charger 220 VAC	NC-18C					*		*	*	*	*	*	*	*							\$15.95
Wall Charger 220 VAC	NC-28C					*	*			*	*	*	*	*							\$26.95
Wall Charger 220 VAC	NC-34C					*	*			*	*	*	*	*							\$29.95
Rapid Charger	CD-15																*				\$29.95
Rapid Charger	CD-15A																	*			\$29.95
Desk Top Rapid Charger	VAC-370		*																	*	\$79.95
Desk Top Rapid Charger	VAC-400B																		VX150/110		\$69.95
Battery 600 mAh 12V	FNB-12S					*				*			*								\$71.95
Battery 600 mAh 7.2 V	FNB-17					std				std			std								\$52.95
Battery 600 mAh 12 V	FNB-27						*				*	*		*							\$62.95
Battery 600 mAh 9.6 V	FNB-38			*	*																\$75.95
Battery 600 mAh 9.6 V	FNB-41	*																			\$58.95
Battery 1100 mAh 9.6 V	FNB-42	*																			\$62.95
Battery 600 mAh 6.0 V	FNB-49	*																			\$19.95
Battery 1100 mAh 7.2 V	FNB-V47	*																			\$55.95
Battery	FNB-58LI																*				\$69.95
Battery 1400 mAh	FNB-80LI																	*			\$83.95
Battery 1000 mAh	FNB-82LI															*					\$38.95
Battery 1300 mAh 7.4 V	FNB-83		*																		\$65.95
Battery	FNB-53																		*		\$19.95
Battery case AA batteries	FBA-17					*				*			*								\$25.95
Battery case AA batteries	FBA-20														*						\$22.95
Battery case AA batteries	FBA-23																*	*			\$25.95
Battery case AA batteries	FBA-25		*																*		\$20.95
Cloning Cable	CT-27	*	*																		\$14.00
Cloning Cable	CT-35			*																	\$9.95
Mike Adapter	CT-44														*						\$12.95
Ant Adapt BNC - Rev SMA	CN-2	*															*				\$8.95
Ant Adapt SMA - BNC	CN-3	*	*												*				*		\$11.00
Belt Clip	Clip 10	*															*				\$7.95
Radio case	CSC-V10	*																			\$35.95
Radio Case FNB-26/27	CSC-52										*	*									\$19.95
Radio case FNB-41/FBA-15	CSC-68	*																			\$16.95
Radio case FNB-40	CSC-69	*																			\$16.95
Radio Case	CSC-73	*															*				\$19.95
Radio Case (soft)	CSC-88																	*			\$15.95
Leather Case	LCC-150/TT																		VX150/110		\$23.95
Leather Case w Swivel	LCC-150S/TT																		VX150/110		\$31.95
BNC-SMA Adapter	CN-3																	*	*	*	\$8.95
Barometric pressure sensor	SU-1																*	*			\$39.95





## PR-780-PTT



The PR 780 is a professional-quality dynamic cardioid microphone with a wide frequency range and excellent high-frequency articulation, resulting in sparkling audio every time you transmit. Originally designed around the Icom IC-7800 Elite-class transceiver, the PR 780 includes the CB-1 PTT base and the SM-3 mount. Compatible with many Kenwood and Yaesu rigs, you can mate your PR 780 to them using the appropriate (optional) CC-1-XLR adapter cable. **HRO Price \$259.95**

## GM / GMV Series

The "Gold Standard" GM Series has become the most-widely-used dynamic microphone for Amateur Radio. Available in the GM 5 configuration (with the full-range HC-5 element), the GM 4 version (with the HC-4 "DX Dream Machine" element), or the high-impedance GM "Vintage"(GM-V) version, the GM Series also includes the Heil Sound's "broadcast" wide-frequency element, for superb fidelity.

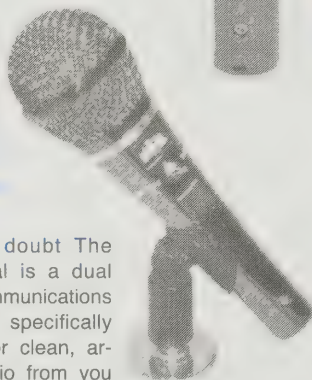
**GM-4 with HC-4 \$129.95**  
**GM-5 with HC-5 \$129.95**



## HM-10 Series

Without a doubt The HM-10 Dual is a dual element communications microphone specifically designed for clean, articulate audio from your amateur radio rig. The HM-10 Dual contains both the HC-5 and the HC-4 "DX Dream Machine" elements.

Model	Description	HRO Price
HM-10 Dual	Microphone with HC-4 & HC-5 elements	\$119.95



## The Classic

*Today's Studio Sound in the Classic Look of the 1930's*

The Classic is an exact copy of a 1930-vintage broadcast microphone, but designed to be used with Amateur Radio transceivers. It includes two microphone elements: the "professional" line wide-frequency-range broadcast element, along with the HC-5 full range communications element, the HC-4 "DX Dream Machine" element, or the "iC" full-range element designed for Icom transceivers. The Classic comes with the CB-1 base, and it also includes a Low/High Impedance switch.

**HRO Prices: Classic 5 (HC-5) \$239.95**  
**Classic 4 (HC4) \$239.95**  
**Classic- IC (pre-Pro Icom) \$239.95**



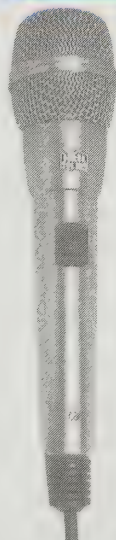
## Commemorative Classic

The Commemorative Classic is a limited-edition version of the Classic microphone, bearing a serial number and signed by live sound pioneer Bob Heil, which commemorates the opening of the Heil Sound technology display in the Rock and Roll Hall of Fame (located in Cleveland, Ohio). Proceeds from the sale of this product are being returned to the museum for furthering the preservation of historical musical items. **HRO Price \$319.95**

## For Icom Radios

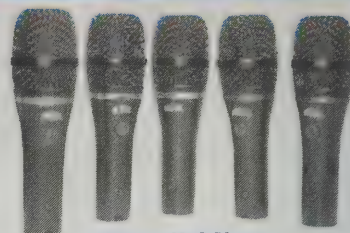
### ICM

**Salvation for Icom Users!**



The iCM microphone answers the need for a high-quality microphone for the early Icom transceivers, featuring a high-quality, high-gain condenser element that provides full-bodied audio with plenty of drive to match up with the low-gain audio systems of the earlier Icom rigs. It also works great with the higher-gain "Pro" radios and IC-7800 from the current Icom line. **HRO Price \$95.95**

## Handheld



## Handi-Mics

The Handi Mic is an ultra-compact hand microphone utilizing a special open sorbothane shock mount, yielding superior audio compared to the standard microphones offered by the radio manufacturers. The Handi Mic is available with the HC-5 full-range element, the HC-4 "DX Dream Machine" element, or the "iC" element designed for Icom rigs; a special "Pro" version is also available, with a wide-frequency "broadcast" element that sounds great on



Dash hanger

FM mobile rigs. **HRO Price \$84.95 each**

Model	Element	PTT
HM-4	HC4DX Dream Machine	Yes
HM-5	HC5 full range	Yes
HM-iC	Electret for most Icom	Yes
HM-PRO	Wide range broadcast	Yes
HM-PRO+	Used on live sound stage & as an interview microphone	No*

\* 3 pin connector

## Switches

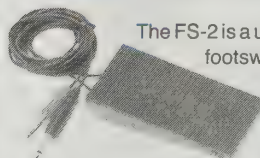
### HS-2

## PTT Hand Switch



Heil's high quality hand switch made for P.T.T. operation is shaped to fit your hand naturally and comfortably. Comes with a 6 foot cable that plugs into the AD-1 or CC-1 adapter. **HRO Price \$29.95**

## FS-2 Dual Footswitch



The FS-2 is a unique dual-action footswitch ideal for the modern Ham station. The FS-2 provides two sequenced micro-switches, one each for connection to your transmitter and your linear amplifier; when you press down on the footswitch, the amplifier's switch is engaged first, followed immediately by the switch for the radio, and when you let up the reverse sequencing takes place. This provides safe T/R switching for both radio and amplifier without need for a control cable between the two units. **HRO Price \$38.95**



# MICROPHONES



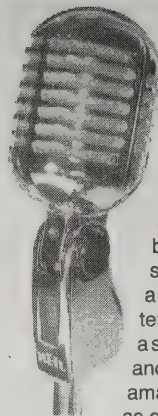
## Classic PRO

shown with optional boom PL-2T

The Classic PRO is an exact reproduction of the 1930 RCA 74B broadcast microphone - complete with your call letters. Using the high quality Heil Pro series dynamic element, the Classic PRO is used in many top commercial FM radio stations. 600 ohms, balanced output, 8' cable terminated into a 3 pin XLR. Comes mounted on the CB-1 base which can be removed and mounted on our PL2T as shown. **HRO Price \$245.95**

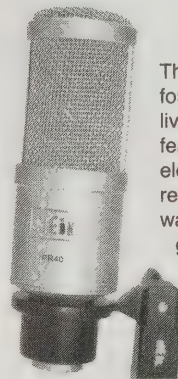
## Heil PR30

The PR 30 was designed for commercial broadcast, live sound and recording. It has comparable sound to the finest condenser microphones because of its wide frequency response, excellent transient response and low IMD. The PR 30 comes standard with the SM-3 5/8" -27 mount. All the PR Series microphones require additional cables to interface with your transceiver. **HRO Price \$249.95**



## Heritage™

The Heritage is a high-performance dynamic microphone, yielding a remarkably natural, clear sound. Its special "Showchrome" chrome finish is plated over a copper-clad molded steel body, and the Heritage is specially designed to produce a high directional cardioid pattern. The Heritage is fitted with a standard 3-pin XLR connector, and adapter cables for most all amateur base rigs are available as options. **HRO Price \$135.95**



## Heil PR40

The PR 40 was designed for commercial broadcast, live sound and recording. It features the Heil Dynamic element with a perfectly flat response from 28 Hz all the way up to 18kHz and has gorgeous articulation. The PR 40 is shipped with the SM-3 5/8" -27 mount and a lined metal carrying case. All the PR Series microphones require additional cables to interface with your transceiver. **HRO Price \$325.95**



## Heil PR20

The PR 20 was designed for commercial broadcast, live sound and recording. It has a smooth, flat response over a wide frequency range and it uses the Heil Pro Series microphone element for excellent transient response, low IMD and reduced proximity effect. The PR 20 comes standard with 3 mesh screens (black, gold and silver). All the PR Series microphones require additional cables to interface with your transceiver. **HRO Price \$149.95**

## Spotlight Series

The Spotlight Series professional quality, dynamic, cardioid microphones are ideal for broadcast recording and live sound. They employ a smooth, flat response over a wide frequency range and have excellent transient response. They are finished with gorgeous pearized enamel in red, white or pink. Like the microphones in the PR Series, the Spotlight Series requires additional cables to interface with your transceiver.

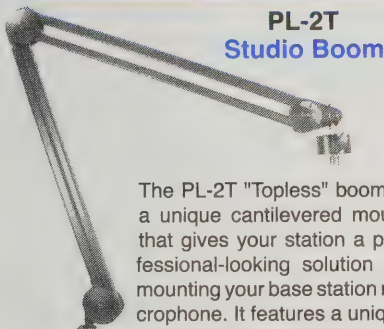
**HRO Prices:** Pink Pearl 20 \$179.95  
Red Pearl 20 \$179.95  
White Pearl 20 \$179.95

## Pro Connector Cables

This 8 ft long cable is used to connect the Classic Pro, Pro, and Heritage microphones to your 8-pin Kenwood, Yaesu, or Icom transceiver. Made with Heilwire to help reduce RFI and noise. Pig tail easily connects to HS-1 or FS-2.

**CC-1 XLR Y (Yaesu cable) \$35.95**  
**CC-1 XLR I (Icom cable) \$35.95**  
**CC-1XLR K (Kenwood cable) \$35.95**

## Mounts



## PL-2T Studio Boom

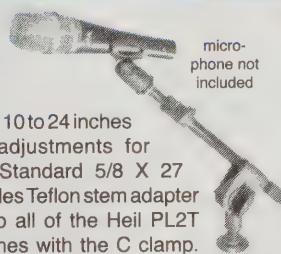
The PL-2T "Topless" boom is a unique cantilevered mount that gives your station a professional-looking solution for mounting your base station microphone. It features a unique channel with a removable cover that lets you tuck the microphone cable away for a clean, clutter-free installation. The PL-2T accepts all Heil Sound industry-standard 5/8-27 microphone mounting clips. **HRO Price \$99.95**

## WM-1

### Vertical Surface Mount

The WM-1 is a unique mount for the Heil booms that allows them to be mounted on a vertical surface. The brass insert of the WM-1 insures smooth, perfect fit. **HRO Price \$25.95**

## SB-2 Small Boom



microphone not included

Extends from 10 to 24 inches with angle adjustments for positioning. Standard 5/8 X 27 thread. Includes Teflon stem adapter to mount into all of the Heil PL2T mounts. Comes with the C clamp. **HRO Price \$42.95**  
**SB-2B black deluxe mount \$89**  
**SB-2C chrome deluxe mount \$89**

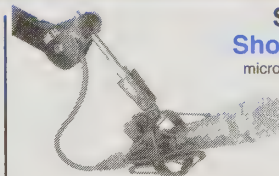
## RS-1 Riser

12" Riser allows you to mount the PL2T behind the transceiver or console and lift the base 12" from the table. Works with SB-2 or PL-2T. **HRO Price \$25.95**

## FL-2

### Flange Mount

With brass insert. Fits the PL-2T & SB-2. **HRO Price \$25.00**



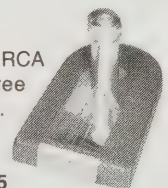
## SM-1 Shock Mount

microphone not included

The ultimate mount for Pro, HM-10 or iCM can be used on all booms or stands. 8 point flexible suspension supports and isolates the Heil microphone from mechanical vibrations. 5/8" X 27 standard threads will mount onto microphone stand and boom arms. (Shown with the GM-5 microphone, not included.) **HRO Price \$49.95**

## CB-1 / CB-1 PTT Classic Base

Beautiful reproduction of a 1930 RCA microphone base. Heavy three pound cast steel with stainless trim. 3" chrome mount accepts 5/8" X 27 hardware. **HRO Price \$58.95**  
**CB-1 PTT w/ PTT switch \$69.95**



## DT-1

### Desktop Flush Mount

Allows PL-2T and SB-2 to slip into 1-1/2" hole drilled into desktop. **HRO Price \$31.95**





## Proset

The award-winning Pro Set is the choice of top DX and contest operators worldwide. Offering a comfortable dual-earmuff design with 40 dB of outside noise rejection, The Pro Set is available with the HC-5 full-range element, the HC-4 "DX Dream Machine" element, or the "iC" element designed for Icom rigs. The Pro Set iC includes an AD-1-iC (8 pin foster) cable.

**HRO Price \$129.95**

## Proset Plus Dual Element Headset

The Pro Set Plus is the ultimate boomset for DX and contest operators. Featuring oversized earmuffs with acoustically-tuned chambers for the speakers, and dual microphone elements, the Pro Set Plus is fully adjustable for maximum operator comfort. The Pro Set Plus is equipped with the HC-5 full-range element and the HC-4 "DX Dream Machine" element, while the Pro set Plus iC includes the HC-4 plus the full-range "iC" element designed for Icom rigs. The Pro Set Plus iC includes an AD-1-iC (8 pin foster) cable.

**HRO Price \$189.95**

**BAG -1** Leatherette travel bag for Pro Set and Pro-Plus  
**HRO Price \$25**

**BAG -2** Leatherette travel bag for Quiet Phone, Traveler, & BM Series.

**HRO Price \$20**

## BM-10 Headset / Microphone

Heil has taken a fresh look at the headset. The BM-10 is an ultra-lightweight, double-sided boomset that's ideal for portable use, or for maximum comfort during long hours of public-service operation. The BM-10 is available with the HC-5 full-range element, the HC-4 "DX Dream Machine" element, or the "iC" element designed for Icom rigs. The BM 10-iC includes an AD-1-iC (8 pin foster) cable.

**BM-10-5** Full range articulation (needs AD-1). **HRO Price \$110.95**

**BM-10-ic** For Icom only. **HRO Price \$129.95**

**BM-10-4 w / HC-4 element.** **HRO Price \$110.95**

## Noise Canceling

### Proset Quiet Phone



The Pro Set Quiet Phone is an outstanding choice for DX and contest operators worldwide. Offering a comfortable dual-earmuff design equipped with Heil Sound's Active Noise Cancellation System, the Pro Set Quiet Phones will greatly attenuate low-frequency noise such as amplifier hum, and they're also great while flying, since they significantly reduce jet noise.

The Pro Set is available with the HC-5 full-range element, the HC-4 "DX Dream Machine" element, or the "iC" element designed for Icom rigs. The Pro Set Quiet Phone iC includes an AD-1-iC (8 pin foster) cable.

**HRO Price \$199.95**

### Quiet Phone



### Active Noise Canceling Headset

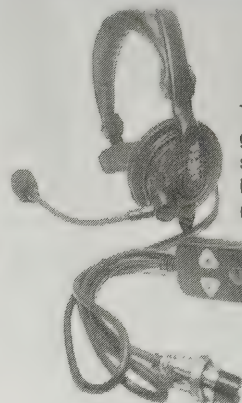
The Heil Sound Quiet Phones are the result of many years of research and development, utilizing Heil Sound's Active Noise Cancellation System that provides significant reduction on low-frequency background noise, especially while flying. Now you can actually hear the audio accompanying that movie you're trying to watch on your flight!

**HRO Price \$99**

# HEADSETS

## Traveler

### A lightweight headset for ALL occasions



### HTSS

The Traveler Single Side headset is a unique headset/boom microphone system, featuring Heil Sound's carefully-designed electret condenser microphone. A

unique interface cable system utilizes various patch cables to allow interfacing to over 100 different radio models, including hand-helds, along with personal computers, cell phones, etc. All adapter cables are sold separately.

### HTDS

The Traveler Dual Side headset is a unique headset/boom microphone system, featuring Heil Sound's carefully-designed electret

condenser microphone. A unique interface cable system utilizes various patch cables to allow interfacing to over 100 different radio models, including hand-helds, along with personal computers, cell phones, etc. All adapter cables are sold separately.

**HRO Prices:**

<b>HTSS Single sided</b>	<b>\$75.95</b>
<b>HTDS Dual sided</b>	<b>\$95.95</b>

### Interface Adapters:

Yaesu YM	HTAYM
Icom 706	HTA706
Icom 8 pin	HTA18
Kenwood 8 pin	HTAK8
Kenwood Modular	HTAKM
PC Soundcard	HTAPC

**HRO Price \$23.95**

### Cables for handi talkies\*:

Yaesu VX except VX7	HTA-VX
Kenwood handhelds	HTA-KHT
Icom handhelds	HTA-IHT

**HRO Price \$23.95**

\*PTT works with handhelds, but UP and DOWN do not.



# MICROPHONES & HEADSETS

## PRYME®

### Radio Products

Premier Communications has a Pryme product to meet any portable communication need. They offer small speaker microphones (the SPM-100 series) and full sized microphones (the SPM-900s). Users on the go will appreciate ultra comfortable lapel microphones (SPM-200 and 200E) and the patented over-the-ear boom microphones (SPM-400). For high-noise environments, use a noise resistant throat mic (SPM-500). Users that need "low profile" communications should check out the flesh-colored "palm mic" (SPM-700) which can easily be concealed.

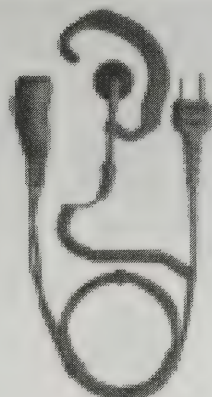
**PMC-200**  
**Desk**  
**Microphone**



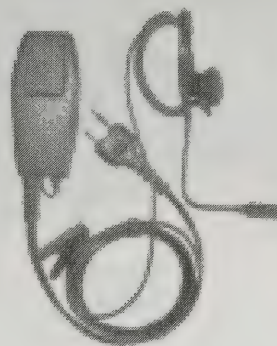
This advanced microphone uses a highly sensitive ceramic condenser element and an amp with three compression levels. A graphic equalizer helps you customize your audio. Adjustments are easy with the built-in analog meter. It has an on-air indicator, frequency up/down controls, and locking and momentary PTT.

### 24 Hour FAX Order Numbers

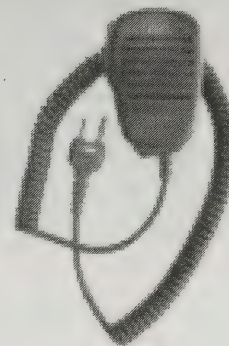
Anaheim	714-533-9485
Atlanta	770-263-9548
Denver	303-745-7394
New Castle	302-322-8808
Oakland	510-534-0729
Phoenix	602-395-1244
Portland	503-684-0469
Salem	603-898-1041
San Diego	858-560-1705
Sunnyvale	408-736-9499
Burbank	818-842-5283
Woodbridge	703-494-3679



**SPM-200EB**



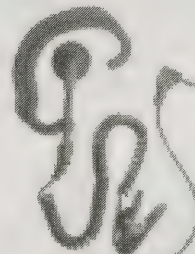
**SPM-400A**



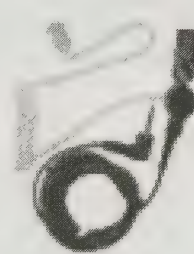
**SPM-100**



**SPM-800**



**EH-100**



**EH-1000**

Model	Description	HRO Price
<b>SPM-100</b>	Speaker / microphone for ADI, Icom, Standard, Yaesu	\$22.95
<b>SPM-101</b>	Speaker / microphone for Kenwood	\$29.95
<b>SPM-102</b>	Speaker microphone for FT-50R / VX-1	\$27.95
<b>SPM-103</b>	Speaker microphone for Motorola Radius Line	\$33.95
<b>SPM-300EB</b>	Lapel mic with ear hook for ADI, Icom, Yaesu, Alinco	\$29.95
<b>SPM-301EB</b>	Lapel microphone and ear hook for Kenwood	\$29.95
<b>SPM-302EB</b>	Lapel microphone with ear hook for FT-50R / VX-1	\$29.95
<b>SPM-303EB</b>	Lapel microphone with ear hook for Motorola Radius Line	\$29.95
<b>SPM-400A</b>	Earpiece/mini boom mic for ADI, Icom, Standard, Yaesu	\$34.95
<b>SPM-401A</b>	Earpiece with mini boom microphone for Kenwood	\$30.95
<b>SPM-402A</b>	Earpiece with mini boom mic w/ PPT cord FT-50R / VX-1	\$29.95
<b>SPM-403A</b>	Earpiece with mini boom mic w/ PPT cord Motorola Radius	\$29.95
<b>SPM-800B</b>	In-helmet speaker mini boom for ADI, Icom, Standard, Yaesu	\$68.00
<b>SPM-801B</b>	In-helmet speaker mini boom for Kenwood	\$59.95
<b>SPM-802B</b>	In-helmet speaker mini boom for FT-50R/VX-1	\$59.95
<b>SPM-803B</b>	In-helmet speaker / mini boom for Motorola Radius Line	\$68.00
<b>SPM-800F</b>	In-helmet speaker / mic for ADI, Icom, Standard, Yaesu	\$68.95
<b>SPM-801F</b>	In-helmet speaker / mic for Kenwood	\$68.95
<b>SPM-802F</b>	In-helmet speaker / mic for FT-50R/VX-1	\$59.95
<b>SPM-803F</b>	In-helmet speaker / mic for Motorola Radius Line	\$68.95
<b>EH-169S</b>	Earphone for speaker/mic 10" cord, 2.5mm	\$20.95
<b>EH-189S</b>	Earphone for speaker/mic 10" cord, 3.5mm	\$20.95
<b>EH-169X</b>	Earphone for Handheld radios, 22" cord, 2.5mm	\$20.95
<b>EH-189X</b>	Earphone for Handheld radios, 22" cord, 3.5mm	\$20.95
<b>EH-1069S</b>	Earphone for speaker/mic 15" cord, 2.5mm	\$32.95
<b>EH-1089S</b>	Earphone for speaker/mic 15" cord, 3.5mm	\$32.95
<b>EH-1069X</b>	Earphone for Handheld radios, 30" cord, 2.5mm	\$32.95
<b>EH-1089X</b>	Earphone for Most Handheld radios, 30" cord, 3.5mm	\$32.95

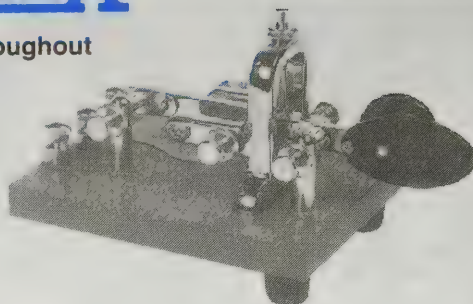


# VIBROPLEX®

Quality and Pride Throughout

## "Vibrokeyer"

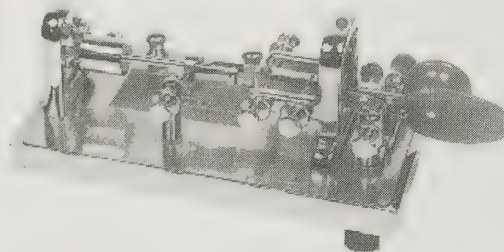
The Vibrokeyer is designed for those who prefer a non-iambic paddle. The single lever paddle imitates the automatic dots and dashes of the electronic keyer with the same motion used to operate the "Bug".



**Vibrokeyer Gold:** The entire base is 24K gold plated with bright decorative chrome top parts. Smooth, jeweled movements for precision control. Stainless steel hardware where appropriate. **HRO Price \$299.95**

**Vibrokeyer Deluxe:** Highly polished decorative chrome base with bright chrome top parts. Silky smooth movements are jeweled as in fine Swiss watches. **HRO Price \$189.95**

**Vibrokeyer Standard:** A neat, crisp black textured finish base with bright decorative chrome parts. Non-jeweled movement. **HRO Price \$149.95**



## "Original"

The Original Vibroplex is a genuine piece of history. First patented in 1894, the Original is still manufactured today using tools and dies very similar to those used by its inventor, Horace G. Martin. Modern-day operators can put their fist

to the same equipment as the Western Union and railroad operators of old.

**Original Gold:** The entire base is 24K gold plated, with bright decorative chrome top parts. Smooth, jeweled movements for precise control. Stainless steel hardware where appropriate. **HRO Price \$299.95**

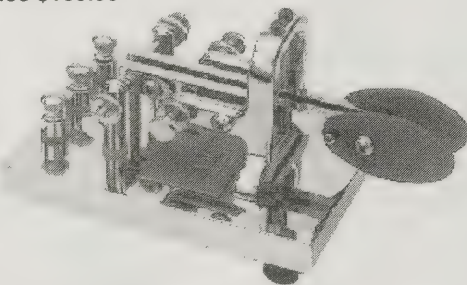
**Original Presentation:** 24K gold plated brass plate on a highly polished decorative chrome base with bright chrome top parts. **HRO Price \$299.95**

**Original Deluxe:** Same as the Presentation but without the 24K gold plated brass plate. **HRO Price \$219.95**

**Original Standard:** A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price \$169.95**

## "Iambic"

This is the modern descendent of the Original. It incorporates the traditional Vibroplex look for use with modern electronic keyers.



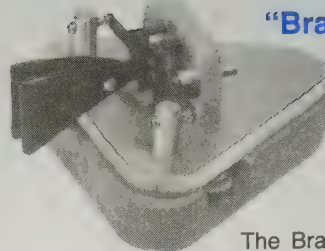
**Iambic Gold:** The entire base is 24K gold plated with decorative chrome top parts. Smooth, jeweled movements for premium control. Stainless steel hardware where appropriate. **HRO Price \$289.95**

**Iambic Presentation:** 24K gold plated brass plate on a highly polished decorative chrome base with bright chrome top parts. Its silky smooth jeweled movements are like those found in fine Swiss watches. **HRO Price \$279.95**

**Iambic Deluxe:** Same as Presentation but without the 24K gold plated brass plate. **HRO Price \$189.95**

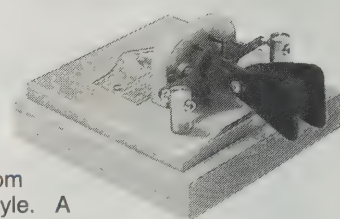
**Iambic Standard:** A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price \$149.95**

## "Brass Racer"



The Brass Racer keys are unique in that there are NO springs in the design. They are crafted from solid brass and mounted on a base of polished hardwood. Tension on the paddle is infinitely adjustable by the use of magnets.

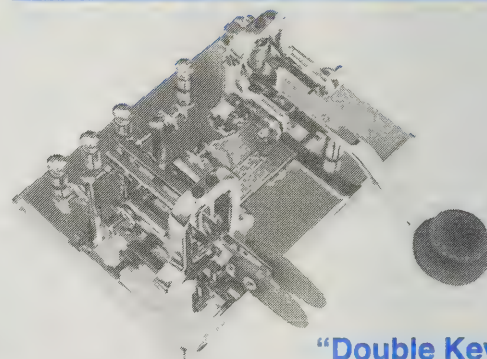
**Brass Racer Iambic:** This iambic paddle is designed for use with an external keyer or the keyer in your radio. The Triangle Brass base is mounted on polished hardwood. **HRO Price \$139.95**



## Square Brass Racer:

This key is a departure from our traditional style. A distinctive design of brushed lacquered SQUARE brass mounted on polished hardwood. **HRO Price \$144.95**

## Combination



## "Double Key"

By popular request, Vibroplex has combined its Straight Key with the classic Vibrokeyer or Iambic paddle on one massive steel base. The Double Key allows the operator to instantly switch from an electronic keyer to the personal touch of a straight key.

**Gold Double Key:** The entire base is 24K gold plated with bright decorative chrome top parts. Stainless steel hardware where required. **HRO Price \$419.95**

**Double Key Deluxe:** Highly polished chrome base with decorative chrome top parts. **HRO Price \$369.95**

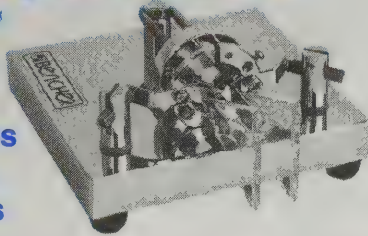
**Double Key Standard:** A neat, crisp, black-textured finish base with bright chrome top parts. **HRO Price \$329.95**



# KEYERS & KEYS



## BY Series Iambic Paddles



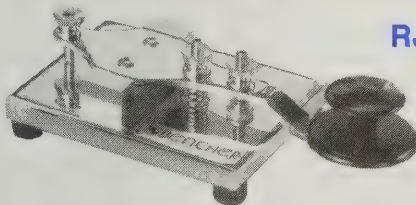
You will enjoy the smooth, precise action of a Bencher paddle with any iambic keyer. These paddles feature a heavy steel base, gold plated silver contact points, non-skid feet, stainless steel adjustable spring, self-adjusting needle bearings, and large acrylic finger paddles.

<b>HRO Prices:</b>	<b>BY-1</b>	<b>Black</b>	<b>\$99.95</b>
	<b>BY-2</b>	<b>Chrome</b>	<b>\$119.95</b>
	<b>BY-3</b>	<b>Gold</b>	<b>\$319.95</b>
	<b>BY-4</b>	<b>Gold/Blk</b>	<b>\$199.95</b>



## Hex Key

Gold plated silver contacts. Molded acrylic finger pads. Polished chromium parts. Magnetic tension adjustment and adjustable contact spacing. Black power coated steel base **HRO Price \$179.95**



## RJ Series Hand Keys

The "RJ" hand keys have an advanced American-style design derived from the telegraph keys that won the west, yet with modern features like Oilite bearings, a solid navy knob, gold-plated solid silver contacts, full locking adjustments of all tension and spacing parameters, and Bencher quality materials throughout. These keys are ideal for the new amateur just mastering code as well as the old time brass pounder anxious to "clear the hook." This key offers the Morse code operator an investment that will bring years of pride and satisfaction. Try the Bencher "RJ" hand key at your nearby HRO. You will be convinced there is no better key available.

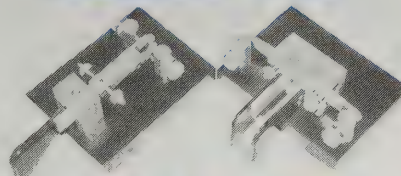
<b>HRO Prices:</b>	<b>RJ-1</b>	<b>Black</b>	<b>\$99.95</b>
	<b>RJ-2</b>	<b>Chrome</b>	<b>\$119.95</b>

## ST Series Single Lever Paddles

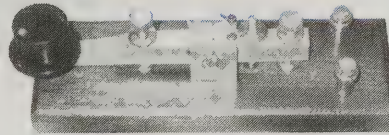
Superb Bencher features and construction for the ham who prefers single lever operation.

<b>HRO Prices:</b>	<b>ST-1</b>	<b>Black</b>	<b>\$109.95</b>
	<b>ST-2</b>	<b>Chrome</b>	<b>\$129.95</b>

## KENT



## Kent Paddles



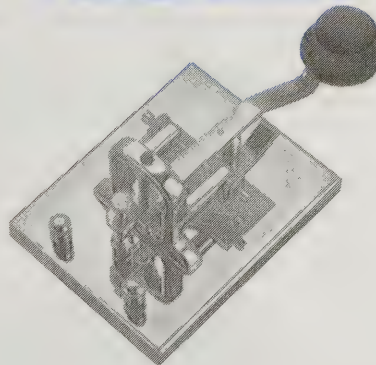
## Kent Straight Key

These paddles offer a smooth feel with sealed ball bearings. Precise gap adjustments with knurled heads on fine pitched screws and locking nuts. Made from solid brass within a permanent brass housing.

<b>Twin Paddle</b>	<b>(TP-1)</b>	<b>\$149.95</b>
<b>Single Paddle</b>	<b>(SP-1)</b>	<b>\$139.95</b>
<b>Straight Key</b>	<b>(SK-1)</b>	<b>\$129.95</b>

## Straight Keys

## VIBROPLEX®



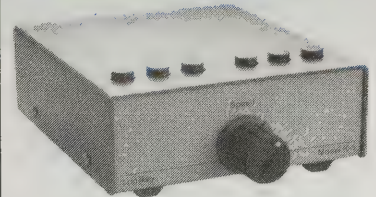
Vibroplex® offers a STRAIGHT key with a unique mechanical action, unlike any other straight key that has ever been manufactured.

**Straight Key Gold:** The entire base is 24K gold plated with bright decorative chrome top parts. Stainless steel hardware where appropriate. **HRO Price \$299.95**

**Straight Key Deluxe:** Highly polished chrome base with decorative chrome top parts. **HRO Price \$189.95**

**Straight Key Standard:** A neat, crisp black textured finish base with bright chrome top parts. **HRO Price \$149.95**

## LOGIKEY



## K-5

## Iambic Memory Keyer

Fully iambic keyer can emulate most other keyers including Curtis "A" timing and Accukeyer. It works with single-lever, non-iambic paddles.

Has 6 active messages plus 12 "banked" messages, 1530 characters total. Messages may "call." Others contain programmed functions, loop for continuous replay, can allow break-in for paddle-inserted text with automatic resumption. Existing messages can be edited. Ultra Speed mode allows messages at speeds to 990 WPM! Contest serial number: 001 to 9999, with push-button decrement if needed.

Linear speed control: 5 to 60 WPM. Adjustable weighting: 25% to 75%. Adjustable frequency sidetone monitor, 500-900 Hz.

Internal monitor level control. Tune function for transmitter adjustment, hand key mode from paddle. Operator selectable automatic character spacing. Full beacon capability.

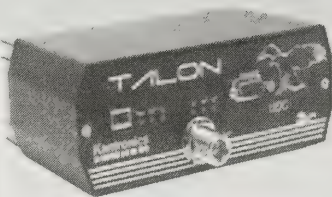
Messages and keyer configuration saved if power is lost. Variable compensation for QSK transmitter character shortening. Keyer offers precise speed read-out. Keys all solid state and most tube rigs. No paddle "buffering" or "debouncing" required with any paddle.

Comes complete with printed manual (English). Runs on 12 volts DC, less than .1 amp, or on 3 AAA batteries when installed in internal battery pack. 90 day limited warranty. **HRO Price \$149.95**



# PACKET & HF MODEMS

## Kantronics



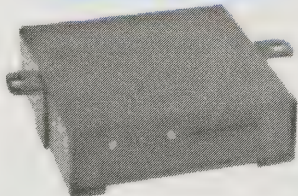
### Talon Commercial UDC

The Talon's exceptional design allows for reliable point-to-point, or point-to-multipoint, communications under less than perfect conditions and excellent performance under adverse signal paths. This is a commercial product designed for asset and vehicle tracking, gas/oil production monitoring, traffic control, water management, utility monitoring, public safety, test messaging and emergency management. The Talon features include:

- MAP™ technology.
- LMR frequencies.
- Embedded GPS module (option).
- Data throughput of 9600 bps.
- Field configurable as master or remote.
- Real time SCADA and telemetry.
- Transparent operation.
- Peer to peer communications.

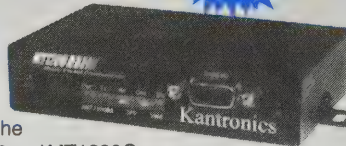
**HRO Price \$1399.95 (w/ GPS)**  
**\$1199.95 (w/o GPS)**

### KML-5000 Passive Tracker



The KML-5000 passive Tracker provides recording of vehicle or equipment location for later retrieval. The unit includes a GPS receiver and data-logger. Once installed in a vehicle, it can record up to 36 eight-hour days of GPS data (location, velocity, time) in a nonvolatile internal memory. At your convenience, the captured history can be transferred from the internal memory to a removable memory card for transport to a personal computer for viewing and analysis. **HRO Price \$349.95**

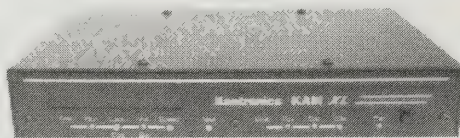
### MT1200 / MT1200G Mobile Tracker



Built on the proud heritage of the KPC-3+, the very compact MT1200 and MT1200G Mobile Trackers allow users to transmit real-time vehicle tracking information for use in APRS networks or NMEA interface mapping software.

The MT1200 and MT1200G may be utilized within an existing packet network, using the Mobile Tracker unit as a mobile and Kantronics legacy TNC at the base. The MT1200 may be used with an external NMEA GPS receiver and the MT1200G includes an embedded GPS with active magnetic mount antenna. 512K flash memory is included for extended GPS or telemetry logging or storage.

**HRO Prices: MT1200 \$199.95 MT1200G \$279.95**



### KAM XL™ Multi-Mode DSP Controller

Kantronics' third generation multi-mode TNC is a state of the art design for operations on HF, VHF and UHF while supporting DSP modems and popular new modes of operation. The unit provides modes of Packet 300, 1200 or 9600 baud, G-TOR, Pactor 1, AMTOR ARQ, PSK31, RTTY, NAVTEX/AMTEX, ASCII, WEFAX and CW. It has a dual port mailbox and remote SYSOP access. It is GPS NMEA-0183 compatible and provides Kantronics Host Mode and KISS. **HRO Price \$399.95**



### KPC-3 Plus VHF / UHF TNC

This compact, low current TNC has become the work horse of packet radio today. It features multiple packet connects, digipeating for APRS operations, WEFAX reception, a GPS mode for tracking, personal packet mailbox and more. **HRO Price \$189.95**



### KPC-9612 Plus / 128 Dual-Speed Dual-Port TNC

TNC is the rapid delivery model, supporting 9600 baud. It features both 1200 and 9600 packet ports, advanced APRS digipeating (APRS is a trademark of Bob Bruninga), (K-Net) networking, amateur beeper (paging) and more. **HRO Price \$389.95**

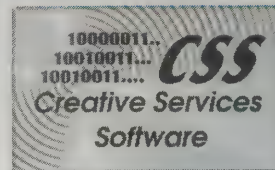
### Keeping Up to Date . . .

The KAM '98 8.3 and KPC-3 Plus 9.1 will provide a second serial port for GPS and APRS capabilities, plus additional GPS improvements.

The KPC-9612 Plus, now sold at version 9.1, has advanced digipeating for GPS, plus the ability to download EMWIN weather broadcasts.

All Kantronics TNCs work great with Pactor 3.0.

### Terminal Software



### For Kantronics or Timewave /AEA

**HRO Price \$99.95**

Creative Services Software presents 32 bit terminal software for the Kantronics (PacTerm 3.0) and Time-wave/AEA TNCs (PkTerm 3.0) and Soundcard Inter-faces. This software is for the Windows operating system.

The software takes advantage of true multi tasking in Windows and uses the standard Windows interface for ease of use. From PSK-31, MFSK, MT63 and SSTY to CW, RTTY, Amtor, Pactor and VHF and HF packet, from single to dual port TNCs or your sound card and its interface, it is now more fun to use the digital modes of amateur radio. You can log each contact with the built-in logbook. Requires AEA /Time-wave Host Mode or Kantronics TNC Hostmode for TNC interface.

You don't even need a TNC with the soundcard only interface. Use with any of the popular soundcard interfaces, even the ones you build yourself. For sound card only mode, requires soundcard interface like Hamhub or MFJ-127X interfaces.

**Call a  
Helpful  
Ham at  
HRO for  
special  
offers**

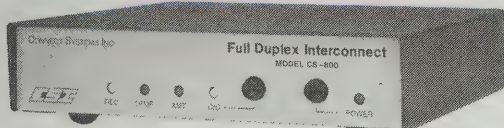


# PHONE PATCHES

## Telephone Interconnects



Connect Systems manufactures a wide range of telephone interconnects and commercial equipment. Please contact HRO or visit the CSI Worldwide Web page at <http://www.connectsystems.com>



**CS-800**

### Full Duplex Interconnect & Repeater Maker

This low cost automatic, full duplex patch converts your dual band base and dual band handheld or mobile into a cellular like duplex phone system. A built-in repeater maker can be enabled which makes the CS-800 suitable for private or club repeater/ auto patch use. The CS-800 comes with standard features unavailable in competing brands such as 90 memory speed dialer, redial, hookflash, CW ID, advanced toll restricts, secret toll override access code, built-in programming keypad and digital readout, tone / pulse dial out, and more. The only connections required are to the mike and speaker jacks of your rig. Fully FCC and DOC approved. **HRO Price \$349.95**

**CS-900**

### Simplex Interconnect

This low cost automatic simplex patch converts your single band base and handheld or mobile into a powerful phone system. A 1/2 second digital voice delay prevents word clipping caused by transceiver and vox switching speed. It can be used base to mobile or through repeaters to extend range (phone-base-repeater-mobile and back mobile-repeater-base-phone). The CS-900 comes with many standard features unavailable in competing brands such as 90 memory speed dialer, redial, hookflash, CW ID, advanced toll restricts, 10 programmable toll override sequences, secret toll override access code, tone/pulse dialout and more. It can be user programmed using the built-in keypad with digital readout, over the air using DTMF, or from any telephone. The only connections required are to the mike and speaker jacks. Fully FCC and DOC approved. **HRO Price \$399.95**

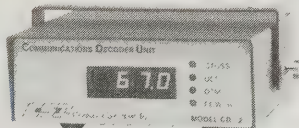
**CD-2**

### Communications Decoder

The CD-2 decodes and displays 51 CTCSS tones and 112 DCS codes originating on the channel you are monitoring. DTMF tones are decoded and displayed as they occur and are replayed a second time slowly so that you can read high speed auto-dialers etc. The gimbal makes the CD-2 easy to mount in a vehicle so you can easily see which CTCSS tone is needed. The RS-232 port can transport all decoded data to a computer. **HRO Price \$199.95**

### CD-2P Software

The CD-2p DOS-based application stores the time and date of each decoded CTCSS, DCS or DTMF from your CD-2. Accumulated data can be displayed or printed. Graphical displays show channel loading and more. **HRO Price \$109.95**



# ENCODERS

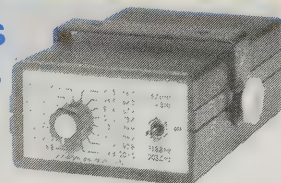
## Encoders / Decoders



**COMMUNICATIONS SPECIALISTS, INC.**

### CTCSS Encoder

**TE-32: HRO Price \$49.95**



Tone encoders and decoders are just what you need to control your repeater or listen only to signals that are meant just for you. TE-32 multi-tone CTCSS encoder is powered by a 6 to 28 vdc unregulated source, has a three position range switch, a frequency accuracy  $\pm 0.1$  Hz maximum over the temperature operating range. The TE-32 is low impedance (1K), low distortion, with adjustable sine wave output, 5 V peak to peak.

	Encode	Decode	Comments	HRO Price
TS-64DS	*	*	Universal design, CTCSS encoder / decoder capability for all FM transceivers	\$57.95
SS-64	*		DIP switch programmable CTCSS encoder for all FM	\$28.95
TE-32	*		Multi-purpose CTCSS / Burst Tone encoder	\$49.95

## Accessories

# Better RF

### 706 Tune Control

**For Icom IC-706 or 706 MkII**

Tune control consists of a small OPC board that plugs into the Molex connector on the back of your radio and makes the "Tuner/Call" button operational. Push once and the transceiver emits 10 watts, steady carrier and sidetone through the speaker (internal or external). Use the signal to tune your antenna, an antenna tuner, or to check your SWR. Press twice more and the transceiver reverts to the previous mode and power. Works 160 through 10 meters. **Suggested List \$32.95**

### 7000 Tune Control

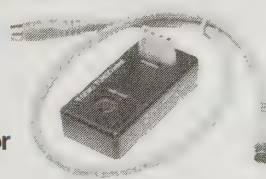
**For Icom IC-7000**

- Makes the TUNE/CALL button functional.
- Displays SWR as you tune an antenna or external tuner.
- Constant 30 watts or pulsed output at normal power.
- Senses voltage on a screwdriver antenna motor.

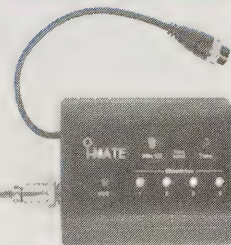
**Suggested List \$54.95**

### Yaesu Tune Control

**For Yaesu FT-100, FT-857 or FT-897**



Make the TUNE button function on your radio provide a low power output for tuning, adjusting antennas, checking SWR, no matter what mode you are using. Interface cable included. Provides an interface between your Yaesu transceiver and Icom type accessories. **Suggested List \$44.95**



### I-Mate

**For Icom IC-746-Pro or IC-756-Pro II**

The I-Mate allows the external selection of pre-recorded voice and keyed messages for the IC-756PROII and keyed messages for the IC-746PRO. It eliminates the necessity to shift the display from an operating mode to a memory select mode simply to transmit the pre-recorded messages.

Pressing one of four buttons on the I-Mate transmits the message associated with that button. It provides a pulsed sine-wave oscillator for tuning of high powered amplifiers and antenna tuners.

The I-Mate plugs directly into a transceiver's microphone jack and receives its power from the transceiver. **Suggested List \$74.95**



# FILTERS

## Timewave Technology Inc.

### Antenna Noise Canceller

#### ANC-4

The ANC-4 rf device eliminates or reduces power line noise, computer noise, TV generated interference, and other types of electrical noise. Attach the unit directly to the antenna connector of the receiver or transceiver to cancel locally generated noise before it affects the receiver AGC circuits. Reception of signals well below the noise level of the local interference is possible.

To cancel locally generated interference, the ANC-4 detects the interfering signal and adjusts its phase and magnitude so that it matches the offending interference at the receiver input, but is 180 degrees out of phase, effectively cancelling the interference. Front panel controls allow adjustment of both phase and magnitude, providing extremely deep cancellation.

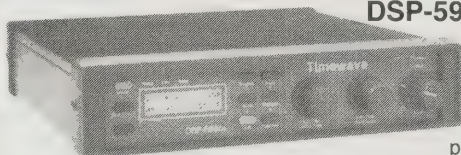
Connect the ANC-4 between the main station antenna and the receiver antenna connector. A second antenna connects to the ANC-4 to pickup noise. A short wire antenna or a short collapsible whip is generally satisfactory for eliminating noises generated around the operating position or in the house, but an external antenna usually works better to eliminate noises generated outside the home. Any noise antenna that works, including combinations of horizontal and vertically polarized antennas, is satisfactory.

The ANC-4 operates as an active antenna by using the noise antenna and the NOISE GAIN control to amplify the antenna output. The unit can also be used as a diversity combiner to peak weak signals or null interfering signals.

**HRO Price 189.95**

### Digital Processor

#### All Mode Noise Filter & RTTY Modem DSP-599zx



This powerful noise and QRM filter surpasses the newest "DSP" radios with its flexible features. Continuous filter tuning up to 5 kHz opens up wider bandwidth modes like shortwave, AM broadcast, and VHF/UHF FM. Heterodynes disappear, weak signals pop up from the noise, and the sharp filters slice away QRM. The DSP RTTY modem (w/optional DSP-RTTY software) pulls out solid copy when you can barely hear a signal. An AM line noise filter dramatically reduces noise. Filter settings are easy-to-read on the backlit alphanumeric LCD display. Pushbuttons select noise reduction, memories, voice, CW, and data modes. Optical encoders tune the filters.

- Hyperspeed DSP - 27 ns, 36.8 MIPS.
- 2 selectable channels with multiple memories.
- Front panel programmable input sensitivity and line output level.

- Calibrated audio volt-meter & generator.
- AC line noise AM filter.
- 13 preset data filters plus two user presets.

**HRO Price \$399.95**

**AC-5 P.S. \$24.95**

### Telephone Filters



Stop telephone RFI from transmitters in the 0.5 to 30 MHz range. These filters are assembled and come with instructions. Special order either model to cover 500 kHz to 3.0 MHz. Call for prices and information.

Model RF-1 Single Line Filter for phones, answering machine, modems, faxes, & cordless phones. RJ-11 modular connectors. Special ordered for two-line phones. **HRO Price \$16.95**

Model RF-2 For inserting RFI filtering into telephone wiring: inside phone jacks, behind wall-mounted phones, etc. Solder-less connectors.

### Noise Reduction



#### SG-7014 Speaker

**HRO Price \$159.95**

The affordable ADSP2 speaker delivers top of the line noise reduction for any receiving device. Two levels of noise reduction (13 dB, 26 dB) and 3 band pass filters (100 Hz, 500 Hz, 1800 Hz) with simple push-button operation. Includes an external headphone jack. 110 - 500 mA consumption.

### Low Pass Filter



**YA-1**

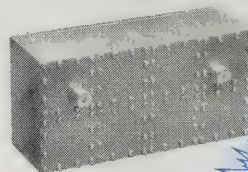


Benchner's low-pass filter has exceptional specifications. Working range: 1.8-29 MHz. Impedance: 50 ohms. Power rating: 1.5 KW continuous, 5 KW peak. Attenuation: at least 80 dB at 54 MHz. **HRO Price \$88.95**

### Bandpass Filters



**DIGITAL COMMUNICATIONS INC.**



**DCI-146 / 440-DB**

Eliminate intermod with these band-pass filters for 144, 220, or 440 MHz or with the 2m / 440 MHz dual band filter. Connect a filter between your VHF / UHF, base or mobile rig and antenna. Enjoy your favorite station without listening to the squawks and squeals of intermod. These filters reduce the strength of interfering signals while allowing the signals you want to hear to pass through at virtually full strength.

The filters are made to first-class specifications with silver-teflon connectors and extruded aluminum, copper and brass. In addition to the standard 4-pole filters, 7-pole and larger ultra-sharp filters are available. The DCI-146-4H intermod filter for 2 meters is 12" X 3" X 5" and has UHF connectors.

Model	Band	HRO Price
DCI-146-4H	2m	\$169.95
DCI-223.5-3H	220 MHz	169.95
DCI-445-10C	440 MHz	189.95
DCI-146/440-DB	2m/440 MHz	239.95

### Ham Radio Outlet Accepts





# LIGHTNING PROTECTION

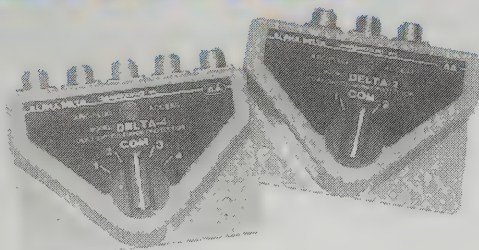
# RADIO CASES

## Coax Switches

# ALPHA DELTA

### Delta-4B 4 Position Switch

This lightning protected 4 position RF coax switch uses the Alpha Delta Arc-Plug cartridge to protect your equipment from electrical surges. The exclusive center "off" (ground) position internally disconnects and grounds all antenna circuits. It has cast housing with constant impedance micro-strip cavity construction. Features a positive detent roller bearing switch drive. Handles full legal power. Delta-4/N for type "N" connectors. The Delta-4 handles frequencies through 500 MHz and the Delta-4/N through 1.3 GHz. **HRO Price \$89.95; Type N \$89.95**



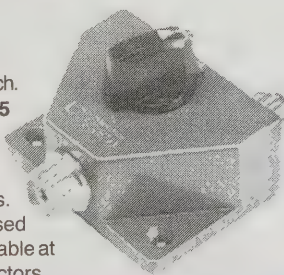
### Delta-2B 2 Position Switch

This 2 position coax switch is precision lightning surge protected. Has the same constant impedance cavity construction with "center-off" ground as the Delta-4 and a built-in replaceable Arc-plug® cartridge. Order UHF or type "N" connectors for low-loss performance through 1.3 GHz. **HRO Price \$59.95; Type N \$75.95.**



**CS-201**  
Two-position switch.  
**HRO Price \$32.95**

Daiwa has two heavy-duty coaxial switches. Both are useable to 500 MHz and the unused positions are grounded. Switches are available at slightly higher prices with type "N" connectors.

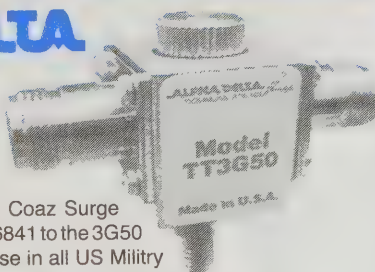


## Surge Protectors

# ALPHA DELTA

### Transi-Traps

The Defense Logistic Agency (DLA) has assigned National Stock Number (NSN) 5920 01 5470278 to the Model TT3G50 Coax Surge Protector and NSN 5325 01 5466841 to the 3G50 ARC-PLUG (tm) Cartridge for use in all US Military and NATO applications, Worldwide. The **ATT3G50** coaxial surge protector was designed for the cellular, microwave point-to-point, and the broadband wireless industry. These products feature very low loss performance through 3 GHz. Typical loss is 0.1 dB at 1 GHz through 0.5 dB at 3 GHz. This series represents the lowest loss broadband design in the industry. Choose type "N" or "UHF" connector.



Model	Description	HRO Price
ATT3G 50	200 W - 3.0 GHz, Type N	\$59.95
ATT3G 50HP	2 kW - 3.0 GHz, Type N	\$59.95
ATT3G 50U	200 W - 500 MHz, UHF	\$49.95
ATT3G 50UHP	2 kW - 500 MHz, UHF	\$49.95

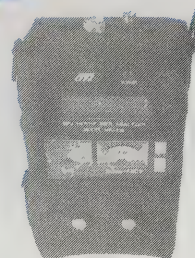
## Radio Protectors



### Secure Shock Absorber

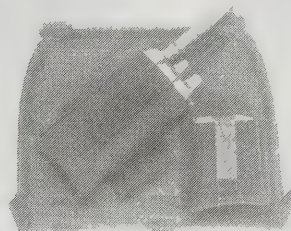


New design water resistant carrying cases are made of bouncy, tough neoprene and nylon. A bun-gee type parachute cord restraining strap secures the HT. Has a durable quick-release clasp on a web belt loop.



### Analyzer POUCH

Neoprene & nylon plus water-resistant padding protect your analyzer. Clear window over read-outs. Back-pocket for accessories. Includes adjustable shoulder strap. Specify any model. **HRO Price \$24.95**



### Chest POUCH

"Hands-free" security. Double-ply cordura "bib" with adjustable harness. Pouches for radio & spare battery. Pen holders and big pocket on back for accessories. Specify ANY radio or pouch. **HRO Price \$25.95**



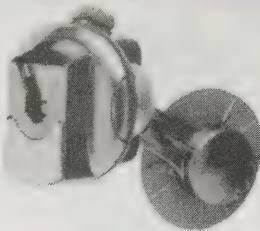
### Packer POUCH 817

The Packer Pouch 817 was especially designed for the Yaesu 817. **HRO Price \$24.95**

Make	Radio Model	Pouch Model	HRO Price
ADI	AT-201	T2A	\$17.95
Alinco	DJ-G5T	32-5T	\$14.95
	DJ-V5DC/V5TH	A5T	\$14.95
	DJ-280TH/480T	A3T	\$14.95
	DJ-196/496/596	P-5	\$14.95
Icom	IC-Q7	S508-Q7	\$12.95
	IC-T2H	T2A	\$14.95
	IC-T7A/T22A	P-5	\$14.95
	IC-T8A/81A	S510-T8	\$14.95
	IC-T90A	90Z	\$14.95
	IC-V8	A3T	\$14.95
	IC-W32A	32-5T	\$14.95
	IC-91	RP-IC91	\$12.95
	TH-D7A	DTX	\$17.95
Kenwood	TH-F6A	K6	\$15.95
	G71A	G71	\$17.95
	TH-79A 5.0 w	S2	\$17.95
	TH-79A 2.7 w	S1	\$17.95
	VC-H1	S2	\$17.95
	FT-50RD	10R	\$14.95
Yaesu	VX-1R	1R	\$12.95
	VX-5R/VR-120	5R	\$14.95
	VX7R	7RX	\$19.95
	VX-150	110/150	\$15.95
	FT-60R	P60	\$19.95
	VX-170	Y170	\$19.95
Uniden	BCD-396T	UN-TT4	\$22.95



# EQUIPMENT MOUNTS



## UltiMount

The UltiMount installs in seconds and can be swiveled, rotated and adjusted to virtually any position. Secured with a flexible pad that has 3M automotive adhesive on the back, the UltiMount can be removed without

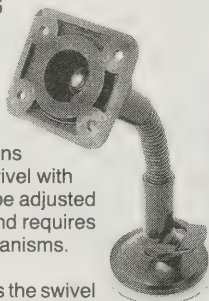
leaving any residue.

Included with the UltiMount: a belt clip, a Nokia style button, two adhesive backed buttons, and a specially formulated surface prep kit used to remove dirt and silicon emulsions from your dash to ensure maximum adhesion. **HRO Price \$24.95**

## WindowMate Mount

The WindowMate is a pre-mixed suction mount for windshield or glass applications and features an integrated swivel with an AMPS hole pattern. It can be adjusted 30-degrees in any direction and requires no locking or tightening mechanisms.

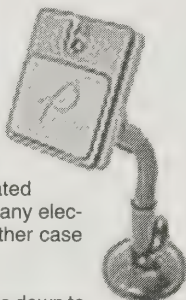
A six-inch flexible arm attaches the swivel to a strong suction cup base that holds tight by simply pushing down the locking lever. Includes mounting hardware. **HRO Price \$14.95.**



## WindowMate Express Mount

The WindowMate Express is a version of the original WindowMate and features an Express Mount attached to the integrated swivel. This mount is perfect for any electronic device using a button, leather case or OEM clip.

Turn the mounting platform upside down to reveal a slot big enough to accommodate a belt clip. Includes a belt clip, two buttons and mounting hardware. **HRO Price \$19.95.**



## Portable Solution



Secure a button to the back of your electronic device with reliable 3M adhesive. Attach the Portable Solution to your vehicle's dash and the system is complete. The Portable Solution even works on phones in leather cases or with built-in clips.

Included with the Portable Solution is a belt clip, a Nokia style button and two adhesive backed buttons. Also included is a specially formulated surface prep kit used to remove dirt and silicon emulsions from your dash to ensure maximum adhesion. **HRO Price \$12.95**



## LoBoy Mount

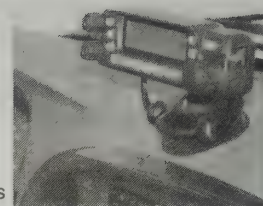
A universal, low profile mount for securing hands free cradles, XM and Sirius satellite radios, TFT displays and more. The LoBoy features an integrated swivel which allows easy adjustment in any

direction, holding securely without locking or tightening levers. The flexible mounting pad with its 3M adhesive back makes installations fast, simple and strong.

Just added to the LoBoy Mount at no additional cost is an L-Bracket. This bracket can be used to mount a device on a horizontal surface like the top of a dash panel or to hold devices in a vertical manner, for example, on the side of a dash console. **HRO Price \$19.95.**

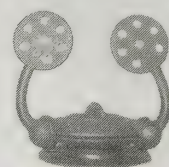
## The BUG Mount

shown with optional radio



The BUG is a mount for securing small, narrow profile radio control heads for Satellite radios, (both XM and Sirius); VHF radios, HAM radios and more.

The BUG features a pivoting action for the two arms which rotate on a solid shaft. This allows for simple alignment of the arms to match



varying hole patterns for mounting different control heads. Double face adhesive pads are included for each arm to secure items without mounting holes. **HRO Price \$19.95**

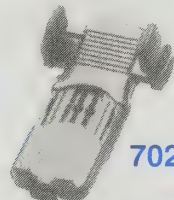
## GPS / Radio / Phone Mounts

# Portagrip

Portagrip's collection of holders for cellular phones, GPS units and radios that will make your mobile operations easier and safer. Standard foot size: 2.5 x 2.5 inches. For tight quarters, use the small foot: 2 x 1.625 inches.



701



702

Portagrip Holders: Holds most phones from 1.6" to 2.6" wide. Includes models **701**, **706** Portagrip / Slim-line with set screw adjustment, **707** Porta-grip / Slimline with knob adjustment.

Portagrip 2000: Holders adjustable both in width and length. Includes models **702** for narrow phones, **703** for phones up to 2.25" and **704** for flip-style phones.



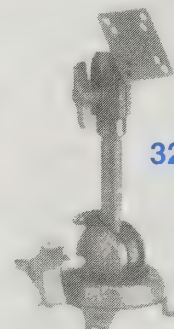
782



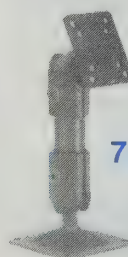
797

Stay-put Flex Mount: Includes model **782**.

Uniflex Mount: Includes model **797** with knob adjustment under mounting plate.



322



716

Standard Mounts: Split ball base with 90 degree tilt movement. Includes models **320** std mount w/6" rise, **322** deluxe mount w/6" rise, **328** mount base only accommodates 5/8" diameter post tilts 0 to 90 degrees, **329** base only accommodates 5/8" diameter post and tilts to 45 degrees over center.

Slimline 2000 Pedestal Mounts: Pivot 210 degrees and rotate 360 degrees, 6" or 9" heights. Includes model **716** w/set screw adjustment at head and foot, **717** knob adjustment at head and foot.

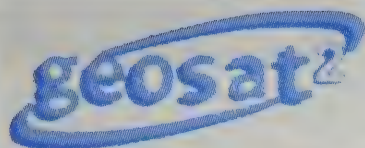


726

Mini Mount: Perfect for tight installations, height only 4". Includes models **726-04** set screw adjustment at head and **727-04** knob adjustment at head.

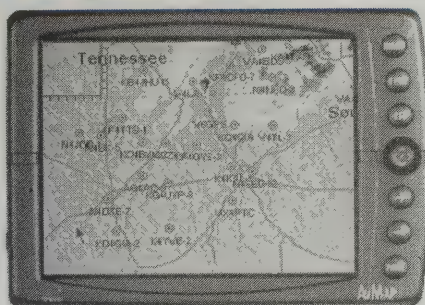


# GLOBAL POSITIONING SYSTEMS



## Geosat 4 Travel

Model G4T  
HRO Price \$749.95



The Geosat 4 Travel is a smart driving assistant for your business or leisure trips throughout North America. The 2 GB secure digital is preloaded with the US TeleAtlas high coverage cartography which you can view in 2D or 3D mode. Canadian map on DVD is included in the box.

Geosat 4 Travel is practical and easy to use with built-in battery, built-in GPS antenna and remote control with full alphanumeric keyboard. You can consult the map safely thanks to the large and ultra bright 5" display.

Connect your laptop, camera or DVD player to the audio / video input and you can view pictures and movies on the screen of your navigator.

With the TMC function (external TMC receiver is needed) you can travel relaxed and arrive on time as the software keeps you informed in real time on traffic conditions.

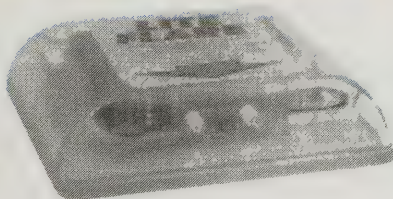
Other features include: detachable power cord, serial port for external GPS antenna, PAL and NTSC video and audio in, PC connection via USB port, free software updates via web site, route recalculation, land elevation, up to 1000 marks points, best route calculation, "Turn Cost" calculation. "Turn Detail screen," Zip codes and house number search, "Drive Me Home" rapid command, and exclusion of toll road and walkways.

Most important, the Geosat 4 Travel includes a Kenwood ready cable for plug and play between the GS4T and Kenwood APRS radios.

## Emergency Light

### LiteFlare

MODEL LF-01  
HRO Price \$14.99



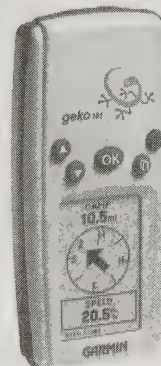
Lite Flare is an economical, low priced alternative to the road flare. Unlike single-use disposable incendiary flares, each Lite Flare provides more than 400 hours of operating efficiency – and they're reusable. Just insert two fresh "AA" batteries. Lite Flare's flashing red light is visible for over two miles during darkness!

The Lite Flare operating mechanism is enclosed inside a rugged military-grade, high impact plastic case that resists water, snow, dust, rough pavement – even the weight of an automobile. Lite Flare is safe to use and won't ignite fuel or clothing. Just one Lite Flare replaces more than 750 (30 minute) incendiary flares. Lite Flares produce no toxic residue or fumes to harm the environment or the user.

The Lite Flare is designed for night time use but can also be used during foggy or heavy overcast daytime conditions. In addition, the Lite Flare is ideal to use during stormy weather conditions. Anyone can operate the Lite Flare, just flip the switch and the Lite Flare begins flashing.



Geko 201



Geko 101



## Geko™ Series Personal Navigators

Gekos are the smallest, lightest (3 oz.), waterproof GPS units on the market; inexpensive, with sleek designs and simple operating systems.

Features	Geko 201	Geko 101
WAAS	Yes	No
Upload/Download	Yes	No
External Power Input	Yes	No
Waypoints	500	250
Altitude stored w/WPT	Yes	Yes
Routes	20	0
Legs per route	125	0
Saved Tracks	10	0
Tracklog Points	10,000	3,000
Datums	>25, 1 user	18
Number of Grids	17, 1 user	11
Distance and Sun	Yes	No
World Time Zones	Yes	Yes
Games	Yes	No
HRO Price	\$139.99	\$99.99

## eTrex™ Legend C & Vista C

The eTrex Legend C and eTrex Vista C bring exciting new features into the popular eTrex series including a 256 color, TFT display. These models, among the smallest handhelds, are housed in water proof cases.

Each has a 12 channel GPS receiver, an ARM processor, high resolution liquid crystal display, and a rocker switch for quick, accurate map panning. All offer full navigation capabilities, satellite status, position format options and interface in English, French, German, Italian or Spanish. Load the optional Map Source to display addresses and businesses.

**eTrex Legend - Color**  
Basemap for North, South and Central America. 8 megabytes of internal memory. Accepts download data from Garmin's entire line of MapSource CD-ROMS. **HRO Price \$299.99**

**eTrex Vista - Color**  
Same as the Legend plus a detailed basemap, built-in barometric altimeter, electronic compass, and 24 MB internal memory. **HRO Price \$349.99**

## eTrex™ Original 12 Parallel Channel GPS



The six-ounce eTrex™, only four by two inches, operates 180 hours on two AA batteries. It will maintain satellite lock even while in forest-like conditions. It stores up to 500 user waypoints with icons and has Garmin's exclusive Trac-Back™ to help you return home. Animated graphics help you identify way-points. **HRO Price \$99.99**

**eTrex Camo** In camouflage casing. Operates on six "AA" batteries (not supplied) or use the included AC adapter on 110-120 VAC. **HRO Price \$129.95**



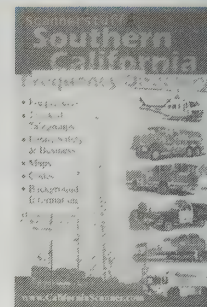
Part Number	Description	2610	Street Pilot	GPS 12 CX	GPS II Plus	GPS III	Nav Talk	GPS III Plus	GPS V	e TREX	e MAP	HRO Price
<b>Antennas, etc</b>												
010-10052-00	GA 28 Low profile remote marine antenna with 30' cable / BNC		*			*						\$129.95
010-10052-02	GA 26 Low profile antenna, mag. & suction mounts 8' cable, BNC		*		*	*						\$99.95
010-10052-04	GA 26C remote Antenna								*			CALL
010-10052-05	GA 27C external antenna	*									*	\$99.99
010-10061-00	GA 26 Trunk mount		*		*	*						\$17.95
010-10062-00	GA 26 Flange mount		*		*	*						\$17.95
010-10067-00	GA 28 Flange mount kit		*									\$20.95
010-10139-00	GA 26 Suction cup mount		*		*	*						\$17.95
010-10152-00	GA26 8 ft extension cable		*		*	*						\$29.95
010-10157-00	8 ft extension for GA 27C										*	\$38.95
011-00237-00	Handheld / portable antenna		*		*	*						\$93.95
013-00002-00	30 ft low-loss antenna extension cable with connectors for GA 28		*									\$107.95
<b>Bracket Mounts</b>												
010-10048-00	Swivel mount bracket			*								\$31.95
010-10111-00	Dash mount bracket				*	*			*			\$31.95
010-10115-00	Bicycle mount kit			*								\$17.95
010-10122-00	Bicycle mount kit				*	*			*			\$25.95
010-10156-00	Swivel mount bracket								*			\$12.95
010-10199-02	Dashboard mount base only		*									\$17.95
010-10202-00	Dash mount										*	\$39.98
010-10204-00	Handlebar mount										*	\$17.99
010-10262-00	Suction cup mount										*	\$39.98
010-10267-00	Bicycle mount									*		\$17.99
<b>Cables, Etc</b>												
010-10082-00	Power/data cable		*		*	*			*			\$27.95
010-10084-00	Cigarette lighter adapter			*								\$39.95
010-10085-00	Cigarette lighter adapter		*		*	*			*			\$23.95
010-10086-00	Data cable			*								\$22.95
010-10141-00	PC interface cable		*	*	*	*						\$38.95
010-10142-00	Data transfer cable (unit/unit)		*	*	*	*						\$46.95
010-10164-00	PC interface cable w/8v cigarette lighter adapter			*								\$50.95
010-10165-00	PC interface cable w/cigarette lighter adapter		*		*	*						\$45.95
010-10310-00	USB to Serial Conv. Cable								*			CALL
010-10477-00	PC/USB cable									C model		\$14.95
010-10563-00	12v adapter cable									C model		\$39.95
<b>Cases</b>												
010-10117-01	Carry Case								*			\$12.95
010-10220-00	Leather case w/view window						*					\$24.99
010-10231-01	Deluxe carrying case	*										\$32.00
010-10221-00	Soft holster						*					\$19.99
010-10232-00	Carrying case w/storage for cartridges (color map only)		*									\$24.95
010-10234-00	Yellow protective case										*	\$15.95
010-10235-00	Leather carry case										*	\$24.99
010-10266-00	Neoprene carrying case									*	*	\$14.99
<b>Other</b>												
010-10054-00	PC software and cable kit		*	*	*	*						\$92.95
010-10203-00	12v cigarette power cord								*	*		\$9.98
010-10205-00	Power cable (bare wire)								*	*		\$22.85
010-10206-00	PC interface cable								*	†		\$39.95
010-10227-00	Blank 8MB mem cartridge		*									\$99.99
010-10226-00	Blank 16MB mem cartridge		*									\$179.95
010-10277-00	A/C PC Adapter								*			\$44.95
010-10477-04	128MB CompactFlash	*										\$60.67
010-10477-05	256MB CompactFlash	*										\$100.00
<b>Map Source CD-ROMs</b>												
010-10215-00	US Roads & Recreational						*	*		*	*	\$99.99
010-10215-01	MapSource World Map						*	*		*	*	\$89.95
010-10215-02	Map Source US Topo						*	*		*	*	\$116.95
010-10215-03	MapSource US Metro	*								*	*	\$149.99
010-10215-13	MapSource US Metro w/ 8MB mem cart						*	*		*	*	\$139.95
010-10332-00	Unlock Coupon entire USA/Canada								*			\$95.95
010-10564-00	Auto navigation kit									C model		CALL

† Included with EMAP DELUXE and works with MAPSOURCE CD's to download waypoints and routes.  
All Mapsource CD's will work with both eMap and eTrex, however, on eTrex, map detail will not be downloaded.

## Scanner Books

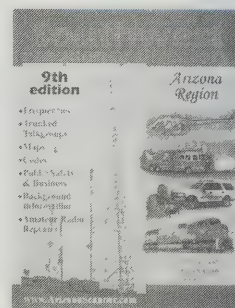
HRO stocks many books with frequencies for localities around the country. Contact your nearest HRO for details.

### Southern California Frequency Directory



Covering 10 Southern California counties in detail, the SCFD is the most up-to-date scanner information resource for the area. Organized by county for easy use, this 448 page directory includes frequencies, channel numbers, PL tones, trunked frequencies and maps. **HRO Price: \$24.99**

### Southwest Frequency Directory (9th Edition)

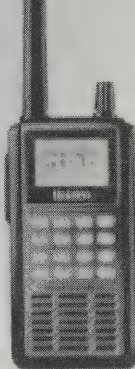


The most up-to-date directory for Arizona has 256 pages of scanner frequencies, codes, aircraft, businesses, and talk-groups for public safety. Organized by county, it includes detailed coverage of the new Phoenix/Mesa digital trunked radio system. **HRO Price: \$34.95**

Look for  
**Ham Radio Outlet at**  
<http://www.hamradio.com>



## BCD-396T TrunkTracker IV Handheld \$CALL - HRO Price



- 6000 dynamically allocated channels.
- TrunkTracker IV (Motorola APCO 25 Digital, Motorola, EDACS, LTR).
- Close Call™ RF capture.
- Fire tone-out. Alpha tagging. Search with scan.
- 100 quick key random access.
- Continuous coverage - 25 MHz to 1.3 GHz (cellular blocked).
- DCS/CTCSS rapid decode.

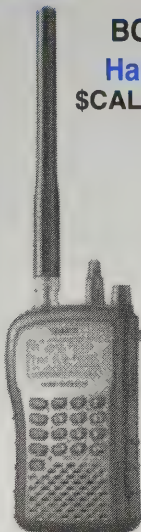
## BC-RH96 Remote Head for Scanners



Lets you fully control your BCD996T or BCD396T TrunkTracker IV Digital scanners or the BCT15 and BR330T Trunk Tracker III scanners, including volume and squelch! Turn your handheld scanner into a mobile, or install your mobile scanner when space is limited. The perfect companion to your Uniden Bearcat Public Safety Scanner.

- Backlit keypad and display.
- Compact size.
- Includes 10 foot data cord and power cable.
- Controls all functions including volume and squelch.
- Full remote control for the BCD996T, BCT15, BCD396T and the BR330T.

## BC-246T Handheld \$CALL - HRO Price



- 1600 channels typical / 2500 maximum.
- Frequency coverage 25-54, 108-174, 216-225, 400-512, 806-956, 1240-1300 MHz (excluding cellular).
- Dynamically allocated memory.
- TrunkTracker III design.
- Alpha tagging.
- S.A.M.E. weather alert.
- 10 custom search ranges.
- 10 preprogrammed service searches.
- Automatic repeater reverse.
- Close Call™ RF capture.
- DCS/CTCSS rapid decode.
- Pager skip / channel alert.
- Backlit display.
- PC control includes a PC cable to transfer information from the computer.

## Trunking / Mobile Series

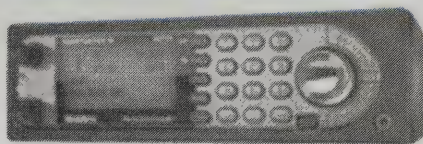
### BC-350C \$129.95 - HRO Price

The BC-350C has 100 channels, 14 band coverage, 800 MHz, preprogrammed service search, local police, fire/EMS scan, marine, air, CB, one touch weather, backlit display, AC or DC operation.

### BC-T8 \$199.95 - HRO Price

This rig has 250 channels, 14-band coverage, Trunk Tracker technology, pre-programmed trunked state highway patrol, highway patrol alert, local police, CB, weather, fire, EMS, 800 MHz, air, DOT and news, backlit keys and display, AC or DC operation.

## BearTracker Mobile Trunking Scanner with GPS Support



### BC-BCT-15 \$CALL - HRO Price

- Frequency coverage 25-54, 2500 dynamically allocated channels.
- Up to 400 Systems.
- TrunkTracker III.
- Location-Based Scanning.
- 100 System Quick Keys.
- BearTracker™ Warning System.
- Close Call™ RF Capture Technology.
- Dangerous Crossing, Dangerous Road and POI Alert.
- Public Safety Scanner.

## TrunkTracker III

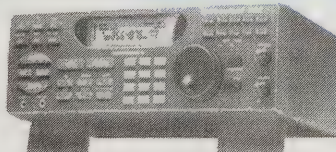


### BC-796D \$549.95 HRO Price

The BC796D APCO 25 Digital Trunking Scanner connects you to both analog and digital trunking systems on conventional frequencies. Monitor Motorola Type I, II, III Hybrid and APCO Phase 1 Digital Systems, EDACS and DACS SCAT, LTR trunking systems, conventional digital APCO 25 frequencies, CB, GMRS, FRS, marine, business band, amateur radio, aircraft, FM & TV broadcasts.

Has 1000 channels, 1000 talkgroup ID's, multi-system tracking, included PC programming software and cable, 10 priority channels, priority talkgroups, priority plus scanning, CTCSS and DCS squelch modes, preprogrammed service search, data skip, SAME weather alert with FIPS, turbo search and scanner clone mode.

## Base / Mobile Rig



### BC-898T \$CALL HRO Price

- Multiple channels - 500 in 10 banks.
- Frequency coverage 25-54, 108-174, 216-512, 806-956 MHz (excluding cellular).
- 1000 talk group ID's. 10 lists of 10 per bank.
- TrunkTracker III technology for Motorola, EDACS and LTR systems.
- DCS / CTCSS rapid decode.
- S.A.M.E. weather alert.
- Priority operation.
- Conventional and trunked search operations.
- AC adapter, SC power cable and automotive power outlet plug.
- Programmable delay. Programmable search. 100 search skip memories.
- AM / FM / NFM modes.
- Frequency steps 5, 6.25, 12.5 and 25 kHz.
- 200 talk group skip memories.

## Scanner Software

## BuTel

Proper programming is critical to the success and enjoyment of scanner listening. BuTel software is the world's most user-friendly and feature-rich scanner software. The software allows you not only to program your scanner but also control it and conduct signals logging with the PRO versions. Requires Windows 98 or later.

### For Bearcat Scanners

**HRO Prices**  
Basic version \$39.95  
Pro version \$69.95

- ARC8**  
(BearTracker 8)
- ARC230**  
(Sportcat 230)
- ARC246** (BC-246)
- ARC250** (BC-250, 785, 296, 796)
- ARC330** (BC-330)
- ARC396** (BC-396)
- ARC780** (BC-780)
- ARC898** (BC-898)
- ARC996** (BC-996)

### For ICOM Scanners

**HRO Price \$39.95**

- ARC2** (ICOM R2)
- ARC3** (ICOM R3)

### For AOR Scanners

- ARC5000**  
(AOR 5000) \$99.95
- ARC8200**  
(AOR 8200) \$69.95
- ARC8600**  
(AOR 8600) \$69.95

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.



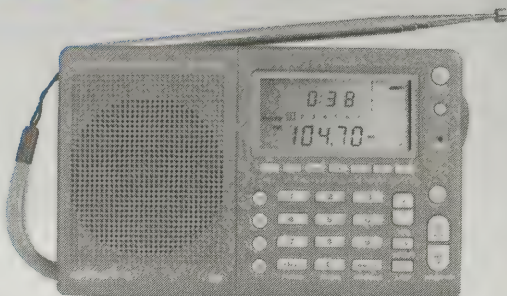
**NEW!**

## Eton E5

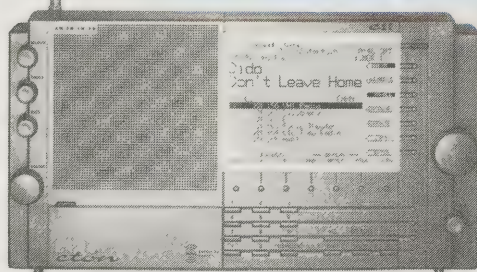
**\$139.95** – HRO Price

The E5 is the world's leading portable, multi-band and Single Side Band (SSB) enabled radio. The E5 unites performance and mobility into one compact unit, bringing the power of local and world-band radio into the palm of your hand. The ultimate in portable technology, the E5 is the latest edition to the Etón Elite range, demonstrating how form and function can work in harmony.

- Digital world-band radio.
- AM / FM-stereo and full shortwave coverage from 1711 to 29999 KHz.
- Earphones included.
- PLL dual conversion.
- Synthesized tuning system.
- AM / SW circuitry.
- Single side band (SSB) and wide-narrow bandwidth switch.
- 6 digital tuning methods via 700 memory programmable presets.



## AM / FM Shortwave and XM Satellite Radio



## Eton E1XM

**\$499.95** – HRO Price  
Satellite Radio subscription not included.



- Frequency coverage: 100-30,000 kHz – shortwave, medium wave, AM broadcast band, and longwave; 87-108 MHz FM broadcast band; XM radio satellite radio.
- Reception modes: AM, FM-stereo, single sideband (selectable USB/LSB) and CW.
- Large digital display.
- Programmable memories: 500 user programmable with alpha labeling plus 1200 user definable country memories.
- Memory scan function.
- Digital phase lock loop (PLL) synthesized tuning with direct digital synthesis (DDS) for drift-free frequency stability and finest tuning resolution.
- Dual conversion superheterodyne circuit.
- High dynamic range allowing for detection of weak signals in the presence of strong signals.
- Selectable bandwidths: 7.0, 4.0, 2.5 kHz for excellent selectivity.
- Single sideband synchronous AM detector: selectable USB/LSB or double sideband.
- IF passband tuning.
- Tuning modes: variable-rate tuning knob, direct keypad frequency entry, up/down

- pushbuttons, and auto-tuning.
- Direct shortwave band entry allows instant access to the shortwave band of choice.
- Selectable AGC: fast and slow mode.
- Display backlighting.
- Dual programmable clocks with WWV auto-setting.
- Dual-event programmable ON / OFF timers.
- Superior audio quality via a bridged type audio amplifier.
- Separate, continuous bass and treble tone controls.
- Headphone jack; stereo line-level input.
- Stereo line-level output.
- Calibrated LCD signal strength meter.
- Built-in antennas: telescopic antenna for shortwave and FM reception; ferrite bar antenna for medium wave AM broadcast reception. XM antenna extra.
- External antenna connection.
- Power sources: four internal D cell batteries (not included) or the included AC adaptor.
- Dimensions: 13-1/8 x 7 x 2-1/2 inches.
- Weight: 4.2 pounds.

## Eton FR-250

**HRO Discount Price \$49.95**

## AM / FM Shortwave Radio, Flashlight, Cell Phone Charger



- Nine band tuning – receives AM, FM and 7 short-wave bands.
- Built-in power generator recharges the internal Ni-MH battery and cell phone batteries.
- Can be powered four different ways: 1) From the built-in rechargeable Ni-MH battery that takes its charge from the dynamo crank and from an AC adaptor (AC adaptor not included); 2) From 3 AA batteries; 3) From the AC adaptor alone (AC adaptor not included); 4) From the dynamo crank alone, even with no battery pack installed.
- Earphone jack: 3.5 mm stereo earphone socket.
- Cell phone charger output jack 3.5 mm.
- Incorporates a fine-tuning control knob superimposed on the main tuning control knob.
- Built-in white LED light source.
- Pleasant audio from the 2 1/2 inch speaker.
- Built-in antennas: telescopic for FM and SW; internal ferrite bar antenna for AM dimensions.
- Dimension: 6.7" W x 6-1/4" H x 2-1/2" D.
- Weight: 1.3 lbs.

## Eton FR-300

**\$49.95** – HRO Price

## AM / FM Radio with NOAA, TV VHF, Flashlight, and Cell Phone Charger



- AM and FM; TV1 and TV2 – VHF channels 2-13.
- NOAA weather – all 7 channels plus "Alert."
- 3 LED light system with emergency flash.
- Siren.
- Crank-charge system charges built-in battery.
- Charges rechargeable battery via AC adaptor/charger (not included).
- Can be powered by 3 AA batteries or, with all batteries removed, by continuous cranking.
- Dimension: 6.7" W x 6.5" H x 2.5" D.
- Weight: 1.3 lbs.



# SWL RECEIVERS

## S-350

### \$CALL

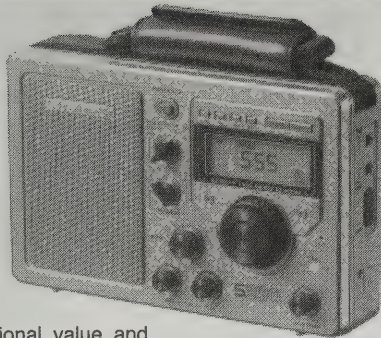
for Special HRO Price

## S-350 DL

Black with Headphones

### \$CALL

for Special HRO Price



The S-350 offers exceptional value and superior reception of AM, FM and international shortwave. An analog receiver with digital frequency display and clock, it offers the best of both worlds to the radio enthusiast. Utilizing single-conversion superheterodyne circuit design, it's powered by 4 D cell batteries (not included) for exceptionally long play time and comes with an AC adapter. It receives continuous shortwave from 2.3-27.41 MHz, covering all 13 international shortwave broadcast bands of 11, 13, 16, 19, 22, 25, 31, 41, 49, 60, 75, 90 and 120 meters. Get news and events from all over the world and superior reception of your favorite domestic AM and FM stations, including those often hard to pull-in AM talk shows. It's ideal for the AM DXing enthusiast.

- Highly sensitive, selective analog tuner.
- Digital frequency readout.
- Liquid crystal display for frequency and clock.
- Digital clock with wake-up & sleep timers.
- Rotary volume control and variable RF Gain control.
- Variable, independent bass/treble control.
- Low-pass filter for shortwave and AM reception.
- Main tuning knob and independent fine-tuning control knob.
- Left/right line level outputs (stereo in FM).
- Earphone socket.
- Built-in telescopic antenna for FM and shortwave.
- Built-in ferrite bar antenna for AM.
- DC socket for AC adapter (included) or optional DC car or boat adapter.

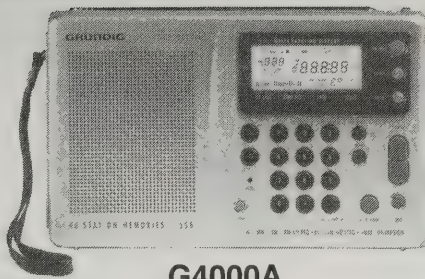
## Be Ready for the Next Power Blackout



HRO  
Discount Price  
\$39.95

## Emergency Radio FR-200

The FR-200 Emergency Radio is powered by a built-in rechargeable Ni-MH battery pack (included), charged by turning the dynamo crank built onto the radio. It can also be powered by 3 AA batteries (not included) or an AC adapter (not included). It receives AM, FM, and continuous shortwave from 3.2-22 MHz, which covers shortwave bands 13, 16, 29, 22, 25, 31, 41, 49, 60, 75 and 90 meters. You'll get great reception of your favorite local AM talk shows and FM music stations and can also listen to international shortwave stations from all over the world. The radio even has a built-in emergency light right on the front. Sound from the built-in speaker is great and the included nylon carrying case (with shoulder strap) protects it from the elements. Plug your favorite earphones (not included) into the earphone jack for private listening.



## G4000A

\$149.95 - HRO Price

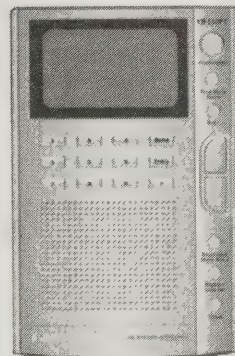
The Yacht 400 just gets better! The G4000A has the same technical specifications and basic appearance as the Yacht Boy 400 but with addition of a leather case. This now brings the receiver into the "Porsche" design family of radios.

## Yacht Boy

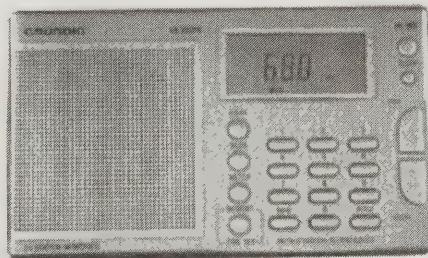
### 550

\$99.95

HRO Price



Travel the world from the comfort of your home or tune in the sounds of home when you're on the road. The YB550 is a lightweight, compact unit with direct key in, manual/auto tuning or manual/auto scan of 100 memories. Shortwave tuning from 1715 - 29995 kHz; AM (MW) 520-1710 kHz and FM 87-108 MHz. Features a dual clock, clock and sleep timer, auto power off and AM/FM stereo.

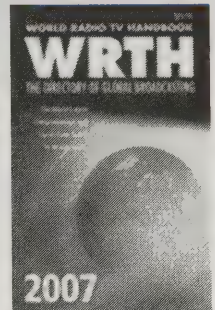


## Yacht Boy 300PE

\$79.95 - HRO Price

The Yacht Boy 300PE covers broadcast AM and FM (in stereo by earphones), and 13 SW bands from 2.3-26.1 MHz. Expanded shortwave coverage now has 2.3-7.8 MHz in SW1 and 9.1-26.1 in SW2. The improved AM / shortwave tuner eliminates audio muting when the  $\pm$  tuning buttons are pressed. Features digital tuning and display with 24 memories and direct frequency entry. Includes an alarm clock with wake-up to a radio station and 90-minute sleep timer. Has a dynamic micro-speaker and a jack for earphones. Use the telescoping antenna or attach an external antenna to the jack. Preserve the titanium-look finish with the protective travel pouch included.

## Books



## World Radio TV Handbook

Complete source-book for 1000+ English broadcasts. Stations listed by country and frequency. Pages of advice, tips, Internet addresses. 2007 edition. **HRO Price: \$29.95**

## The Shortwave Guide

This simple and comprehensive guide to listening to shortwave radio is by the publishers of WRTH. It is perfect for the listener and DXer alike, and its compact form makes it ideal for travelling. **HRO Price: \$15.95**



## Passport to World Band Radio

News and shows from 160 countries. Reviews and advice on how to get started listening to international radio. 2007 edition. **HRO Price: \$19.95**





Discover AOR, the serious choice in Advanced Technology Receivers

### AR-8600BMKII

Blocked — \$999.95

### AR-8600UMKII

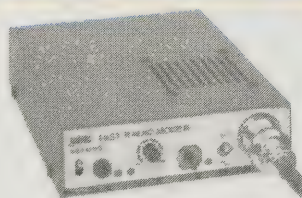
Unblocked — \$999.95

HRO Discount Prices



Use this versatile receiver as a mobile, base, or transportable. Power it by an external 12VDC power supply, optional DC lead from a 12V vehicle, or from an optional internally fitted NiCd battery pack. All mode: (narrow FM, wide FM, narrow AM, plus the standard modes) with SSB capability. Steps down to 50Hz, has a TCXO for high stability, and an RS232 port for computer control with free software from the AOR web site. Frequency coverage is 530 kHz to 2040 MHz with no gaps (cellular blocked). Noise limiter and attenuator, band scope with save trace facility, twin frequency readout with bar signal meter, separate controls for volume and squelch, programmable scan and search, custom back-lit LCD display, a total of 1000 memories in 20 memory bands.

### Digital Modem



### ARD9800 Digital SSB

\$549.95 — HRO Discount Price

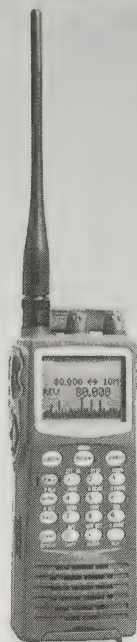
The ARD9800 modem connects to the microphone input of any transceiver. The user simply wires a connector for his particular transceiver, connects the speaker output of his transceiver to the modem and then connects the modem to a 12VDC power source. The normal analog operation of the transceiver remains intact. Digital voice HF is possible by selecting the Digital Mode. Incoming digital voice signals are automatically decoded, no selection is necessary. No modifications are needed to the transceiver.

### AR-8200MKIIIB

#### All-Mode

\$Call — HRO Discount Price

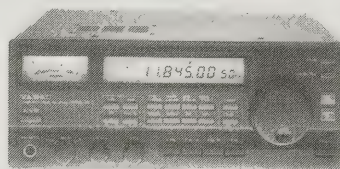
This handheld wide range receiver has all mode reception including super narrow FM, wide and narrow AM, USB, LSB, CW and standard AM and FM modes. Covers 500 KHz to 3000 MHz (cell band blocked) with 1,000 memory channels (20 banks of 50 ch.). True carrier reinsertion in SSB modes. Includes 3 KHz SSB filter! Detachable MW antenna with negative feedback. Computer control and programming (requires optional connection cable). Download free control software from AOR web site! Optional internal cards expand capabilities.



### VR-5000

\$CALL — HRO Price

This multimode desktop scanning receiver has continuous frequency coverage from 100 kHz to 2.6 GHz (cellular frequencies are blocked and non-restorable). Features direct keypad entry, a wide variety of scanning capabilities, and 2000 memory channels which may be separated into as many as 100 memory banks. Memory banks and memory channels may have alphanumeric labels. Sort channels by frequency, alphanumeric name or by operating mode.



### FRG-100B

\$CALL — HRO Price

This receiver provides general coverage of CW, SSB, AM and FM modes from 50 kHz to 30 MHz.

- Tuning steps: select standard or user-programmable.
- LCD display w/10Hz read-out.
- Broadcast band mode.
- 50 tunable memories.
- Multi-function scanning.
- Adjustable BFO w/ selectable CW sideband.
- Optional FM unit, CW filters.



**Dualwatch, Digital Mode,  
Diversity Receive**

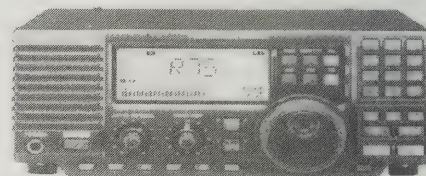
### IC-R2500

**NEW!**

- Wide LCD display
- Digital mode reception.
- 1000 alphanumeric memory channels.
- 0.10-3299.999 MHz AM, FM, WFM, DV (UT-118), P25 (UT-122) main rcvr. Cellular blocked.

### IC-PCR-2500

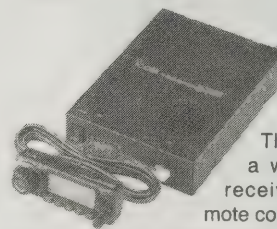
- 3 receiver screens.
- PC controlled
- 0.10-3299.999 MHz AM, FM, WFM, DV (UT-118), P25 (UT-122) main rcvr. Cellular blocked.
- Bandscope / time-line scope.
- DSP capability



### IC-R75

The IC-R75 covers 0.03-60 MHz — marine, amateur radio and short wave broadcasts. Features a high stability receiver circuit, superior dynamic range, twin PBT, DSP capabilities, provisions for 2 optional filters, FM mode standard, alphanumeric read out and selectable RF gain/squelch control.

### IC-R1500



The IC-R5100 is a wideband mobile receiver with a remote control head (cable supplied). It covers 0.01 - 3299.999 MHz (cellular blocked).

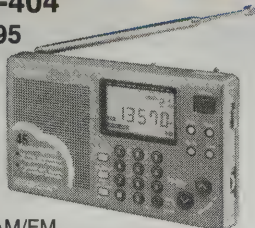
Features include: 60 channel per second scan; optional DSP with UT-106; 1000 alphanumeric memory channels arranged in 21 banks; CTC-SS/DTCS tone and pocket beep; VSC (Voice Squelch Control); IF filter and IF shift (CW,SSB); Noise blanker (SSB, CW,AM); RF attenuator; All functions are available when connected to a PC. Cloning function allows you to read/write memory channels from the PC.



## SANGEAN

### ATS-404 \$79.95

HRO  
Discount  
Price



This digital, AM/FM stereo shortwave receiver provides continuous coverage of all shortwave bands and any frequency in between; has an auto preset system; auto memory scan; human wake system; illuminated display with seconds display; keypad entry; 45 preset memories; auto/manual search and 12/24 hour display.

### ATS-505P \$119.95

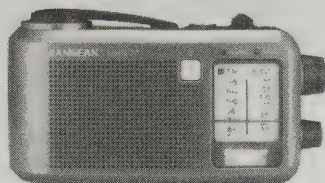
HRO Discount Price



The world's first affordable professional digital multi-band receiver offers the performance and features of more expensive table model receivers. It has continuous coverage, auto-memory scan, SSB reception, auto present system, human wake system, illuminated display, dual time, 12/24 hour display, AM/FM stereo/SW receiver, auto/manual search, tone control, keypad entry, 9/10 kHz switch.

### MMR77 \$49.95

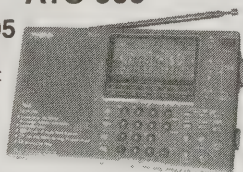
HRO Discount Price



The MMR77 is a top quality AM/FM Radio with multi-purpose emergency capabilities. It features a dynamo powered one-minute wind for 30 minutes play time. It can be powered by 2 standard AA batteries or an optional AC adapter.

### ATS-909

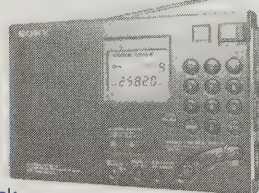
\$239.95  
- HRO  
Discount  
Price



- 306 memories: 261 SW, 18 MW, 18 FM, 9 LW.
- 5 tuning methods.
- ATS auto tuning system.
- SSB (LSB and USB) with 40 Hz tuning steps.
- Wide / narrow filter.
- Manual editing to insert 8 alpha-numeric characters on the display.
- Auto SW search.
- Direct recall of a favorite station.
- 3 individual timers.
- Mono / stereo selector switch.
- PLL dual conversion receiver with tone control.
- Separate audio recorder output & standby control jacks.

## SONY

### ICF-SW7600GR \$159.95 - HRO Price



Travelers love this versatile World Band Radio® receiver with stereo FM reception and instant access to all channels and bands. Built-in clock timer has sleep / stand-by functions.

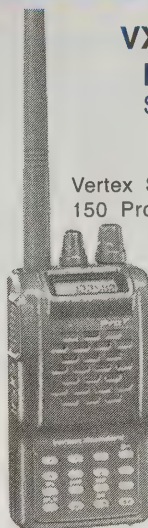
- AM (LW, MW, SW) / FM stereo reception.
- Dual-conversion superheterodyne circuitry.
- 10-key direct access™ tuning.
- PLL quartz synthesis tuning gives accurate, drift-free frequency selection.
- Manual & automatic scan tuning.

- A jack gives easy antenna connection.
- SSB circuitry for reception of voice and Morse code (CW) on amateur bands.
- Liquid crystal display (LCD).
- Antennas: a built-in ferrite bar for MW and LW and a telescoping whip.
- A 3" speaker and high / low tone provides a wide range of sound for music or news.
- Requires 4 AA batteries (not included) or the optional worldwide AC adapter.

## YAesu

### Com

### VXA-150 Pro V \$CALL



Vertex Standard VXA-150 Pro V is a communications-only airband transceiver.

• 5 watts pe p transmit power output.

• Direct frequency entry from 16 button keypad.

• Backlit keypad and display.

• 150 memory channels with 8 character alpha-numeric display.

- Ten NOAA weather channel receive.
- One touch monitor for easy squelch access.
- Comes with rechargeable battery, battery charger, headset adapter, antenna and belt clip.
- Three year manufacturer parts and labor warranty.

## ICOM

### Nav / Com

### IC-A4 \$CALL

for HRO Price

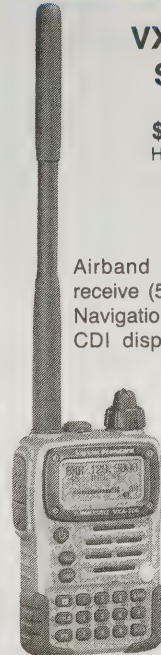
The IC-A4 is a low cost, light weight and compact portable for providing reliable communications for pilots. The channel name function allows you to assign 5-character names to each channel. Transmits and receives on all 760 aviation channels. Has 2 scanning modes.



### Nav / Com

### VXA-710 Spirit

\$399.95  
HRO Price



Airband transmit and receive (5 watts P.E.P.). Navigation with VOR / CDI display. Business band radio receive. FM broadcast receive. NOAA weather channel receive. Powered by a long life lithium ion battery. Submersible design. Comes supplied with rechargeable battery and charger, headset adapter antenna and belt clip. 3 year parts and labor warranty.

Navigation with VOR / CDI display. Business band radio receive. FM broadcast receive. NOAA weather channel receive. Powered by a long life lithium ion battery. Submersible design. Comes supplied with rechargeable battery and charger, headset adapter antenna and belt clip. 3 year parts and labor warranty.

Navigation with VOR / CDI display. Business band radio receive. FM broadcast receive. NOAA weather channel receive. Powered by a long life lithium ion battery. Submersible design. Comes supplied with rechargeable battery and charger, headset adapter antenna and belt clip. 3 year parts and labor warranty.

### VXA-300 Pilot

\$CALL  
for HRO Price

Airband transmit and receive (5 watts P.E.P.). Navigation with VOR / CDI display. Extra loud audio amplifier and large LCD display. Powered by a long life nickel metal hydride battery. Submersible design. Comes supplied with rechargeable battery and charger, headset adapter, antenna, and belt clip. 3-year parts and labor warranty.



Navigation with VOR / CDI display. Extra loud audio amplifier and large LCD display. Powered by a long life nickel metal hydride battery. Submersible design. Comes supplied with rechargeable battery and charger, headset adapter, antenna, and belt clip. 3-year parts and labor warranty.

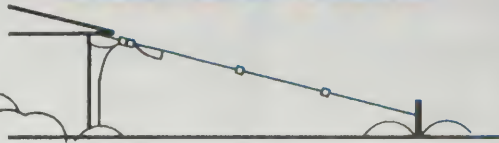


# SWL / WIDEBAND ANTENNAS

# STUDY AIDS

## Shortwave Listening

### ALPHA DELTA



#### DX-SWL

The DX-SWL is tuned for the most popular SWL bands (13, 16, 18, 19, 21, 25, 31, 41, 49, 90 and 120 meters). It can be used as a multi-band transmit antenna with the appropriate antenna tuner. Length is 60 feet. Requires a single support. Standard coax connects antenna to your radio. Feed point is 50 ohms. SO-239 connection. **HRO Price \$90.95**

#### DX-ULTRA

The multi-element DX-ULTRA has extremely low-noise performance. Tapered wing design allows broadband operation. Configure as dipole, inverted vee, or sloper. Covers MW, tropical, SW, government, military, embassy, maritime, aircraft, and commercial frequencies. 80 feet long. Made with ISO-RES inductors and parallel wire elements. Uses the Delta-C center insulator, Delta-CIN end insulators, and 12 gauge solid copper wire with grey PVC insulation. Elements are separated by grey PVC rod. **HRO Price \$119.95**

### McKay Dymek DA100E Active Antenna

Frequency Coverage: 50 kHz - 30 MHz, continuous.  
Height: 4 feet 8" (142cm).  
Output Impedance: Switch select 50, 100, 500 ohms.  
Attenuation: Switch selectable 0, 10, 20 dB.  
Power Required: 110-120 or 220-240 VAC switch selectable, 50-60 Hz, 4 watts, or 12 VDC 0.4 Amp.  
Dimensions: Antenna Module: 3.75"W x 4.375"H x 2"D (9.5 x 11 x 5cm).  
Power Supply: 6.5"W x 3"H x 7.5"D (16.5 x 7.6 x 19cm).  
Shipping weight: 9 lbs (4.1 kg).  
**HRO Price \$189.95**



#### SWL Sloper

The Sloper covers SWL bands from 11-120 meters. Automatic band switching. SO-239 connector for attaching coaxial cable. **HRO Price \$89.95**

#### Eavesdropper™

This high performance trapped dipole for the 11-60 meter SWL bands is 42 feet long. Twin lead or coax models are available. **HRO Price \$89.95**

### SONY Active Antenna AN-1

For the SW listener with space problems, the AN-1 has a frequency range of 150 kHz to 30 MHz. Has a low noise FET in the built-in preamp. Built-in attenuator. Requires 6 AA batteries or AC-12 adapter. Antenna can be used inside or outside. Comes with 39 feet of cable. **HRO Price \$89.95**

## Log Periodic



CLP5130-1

The **CLP5130** antennas are high gain, wide band VHF/UHF log periodic beams for horizontally polarized base station use. Covers amateur bands from 50-1300 MHz, FM broadcasting, scanning, VHF/UHF TV, air band communications, government and business bands.

Forward gain is 10 to 12 dB - 10 to 16 times the gain of a nondirectional discone type antenna. The VSWR is less than 2.0:1 across the band. The high-quality aluminum antennas have a boom design that allows movement of the phasing line. Distortions in the vertical and horizontal planes are minimized and element adjustment is not necessary. The boom-to-mast bracket is made of a lightweight and rugged magnesium alloy.

	CLP 5130-1	CLP 5130-2
Frequency	50-1300 MHz	108-1300 MHz
No. Elements	23	19
Power PEP	500W	500W
Forward Gain	10-12 dBi	10-12 dBi
Front/Back	15 db	15 db
Longest element	9' 10"	4' 6"
Boom length	5' 9"	4' 6"
HRO Price	\$449.95	\$319.95



### D-130J D-130NJ Super Wideband Discone



Monitor 25-1300 MHz.  
Transmit on 50, 144, 430, 1200 MHz. All stainless steel. Input power 200 watts. Impedance: 50 ohms. VSWR: 1.5:1. Length: 1.7 meters. Mounts on 1" to 2" masts. DJ-130 UHF and DJ-130NJ Type-N connector. **HRO Price D-130J \$99.95; D-130NJ \$99.95**



## Gordon West

*Study with the Best!*

Part Number	Description	HRO Price
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#### Study Manuals

GWTM	Technician Class Book	\$15.95
GWTV	Technician Audio Theory Course on 6 CDs	34.95
NCS	Tech Book plus Software Package	39.95
GWGM	General Class Book	19.95
GWGW	General Audio Theory Course on 4 CDs	24.95
GWEM	Extra Class Book	19.95
GWEW	Extra Audio Theory Course on 7 CDs	39.95
ECS	Extra Book plus Software Package	39.95
TPG	Tech plus General Value Package	59.95
HOS	W5YI Ham Operator Software - no books	39.95
HOSB	W5YI Ham Operator Software plus 3 books	79.95

#### Morse Code Study Materials

GW05	Morse Code 0-5 wpm 8 CDs	29.95
GW13	Morse Code 6-16 wpm 6 tapes	29.95
GW20	Morse Code 10-28 wpm 6 tapes	29.95
GWCT	CW Refresher Course 0-5 wpm, 2 audio CDs	14.95
WMC	W5YI Code Software 0-48 wpm	14.95

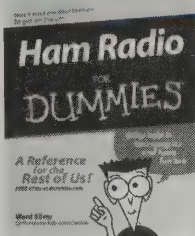
#### Other Books

GSTD	Getting Started in Electronics	19.95
MINI-1	Mini Notebook, Vol. 1: timer, op amps, optoelectronic circuits and projects	12.95
MINI-2	Mini Notebook, Vol. 2: science and communication circuits and projects	12.95
MINI-3	Mini Notebook, Vol. 3: electronic sensor circuits and projects	12.95
MINI-4	Mini Notebook, Vol. 4: electronic formulas, symbols and circuits	12.95
BELC	Basic Electronics	19.95
BDIG	Basic Digital Electronics	19.95
BCOM	Basic Communications (analog) Electronics	19.95
GROL	Get Your Commercial Radio License - Book	39.95
GRSP	Get Your Commercial Radio License - Book plus W5YI Study Software Package	69.95



# AMATEUR BOOKS / MAPS

## Ham Radio For Dummies



Hams do cool things like talking to folks around the world and helping with communications during emergencies. If hamming it up sounds like fun, here's the scoop,

including licensing requirements and how to set up a station. And if you're already licensed, this book will help you start sounding (and feeling) like a pro!

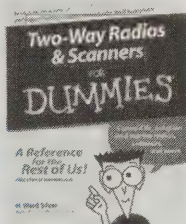
### The Dummies Way

- Explanations in plain English.
- "Get in, get out" information.
- Icons and other navigational aids.
- Tear-out cheat sheet.
- Top ten lists.
- A dash of humor and fun.

### Discover how to:

- Understand ham jargon.
- Communicate on the air.
- Prepare for the license exam.
- Set up a radio shack.
- Help in an emergency or natural disaster.
- Be a ham on the go.

**2 Way  
Radios &  
Scanners for  
Dummies**  
HRO Price 21.99

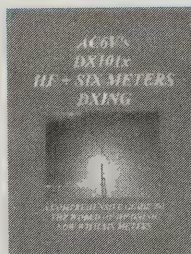


## Study Aids

### DXing 101

DXing 101 features the DXing advice of several noted DXers and technical gurus. It's true, practical advice for those just entering into HFing and the DXing world.

HRO Price \$24.95



### FM 101

Learn all about repeaters—the jargon, protocol, offsets, tones, Q signals, and more. Learn how to choose and use equipment. Understand the inner workings. Extensive glossary of terms.

HRO Price \$12.95

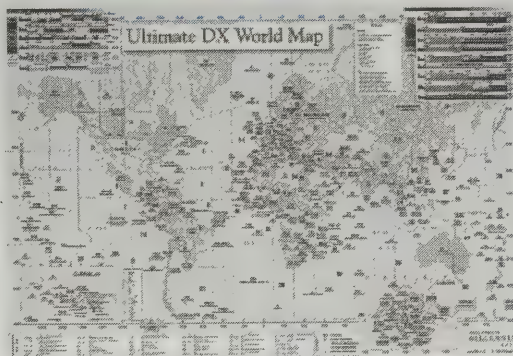
**AC6V's  
FM 101  
USING FM  
REPEATERS**



A COMPREHENSIVE GUIDE TO YOUR FIRST FM REPEATER AND USING FM REPEATERS

## MILLENNIA

### Ultimate DX World Map™



Millennia Arts' wall map combines contemporary cartography with updated Amateur DX information. Extraordinary detail and quality make this an exceptional choice for reference or display or for a contest.

The Ultimate DX is a complete Mercator-style political world map with time zones. All countries have their DX call sign prefixes indicated. Comprehensive band plan charts for amateur radio allocation are conveniently located on the map for quick reference.

- Accurate DX call sign prefixes.
- Accurate world CW zones.
- Complete HF / UHF / VHF band plan charts.
- Amateur Radio common frequency guide.
- RST system details.
- International phonetic alphabet.
- Magnified views of the Caribbean & Europe.
- World Time Zone separations.
- All US regional codes.

### TWO SIZES

MA36L 24 x 36" Laminated \$23.95  
MA25L 18.5 x 25.5" Laminated \$19.95

### HRO Prices

## CQ Publications

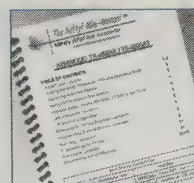
**ARC2007** Amateur Radio Calendar 2007  
**BAUBAU** Building & Using Baluns & Ununs  
**LMOA** Lew McCoy on Antennas  
**Quadantennas** Quad Antennas  
**TPROM** Packet Radio Ops Manual

## Ham Magazines

**CQ** CQ Monthly  
**CQVHF** CQ VHF Quarterly  
**Popular** Popular Communications  
**QST** QST Monthly  
**MT** Monitoring Times Monthly  
**Scanning USA** Scanning USA  
**WRN** World Radio News

Software is sold on a non-returnable basis.  
Any software problems will be resolved under the terms of the manufacturer's warranty.

## Radio Manuals



### Nifty Mini-Manuals

Mini-Manuals are fully laminated, spiral bound booklets, 4.25 x 8 inches, providing simplified step-by-step instructions for all your radio's features. These short-form manuals are smaller, more durable, and easier to use than manuals normally supplied with a radio. Call HRO for your radio model and price.

**artsci BOOKS**

### U.S. Repeater Map Book USRG 11th edition

The PERFECT traveling companion for the radio enthusiast. Road maps show major highways and cities in every state. Amateur radio repeater frequencies are included. This is a must for truckers and travelers. Enhanced maps provide great highway detail.

HRO Price \$9.95

### Guides to Technical Radio Modifications & Alignment Controls

#### RTM

Easy to follow instructions (with detailed drawings) to enhance almost all brands of amateur HT's and mobiles. Includes extended frequency plans.

Volume A (Icom, Kenwood, Scanners)  
Volume B

(Alinco, Standard, Yaesu, others)  
HRO Price \$19.95 each

## Reference



HRO Price  
\$12.95

### Pocket Reference

Third Edition

This concise all-purpose reference has hundreds of tables,

maps, formulas, constants & conversions. More than 200 new pages and thousands of updates!

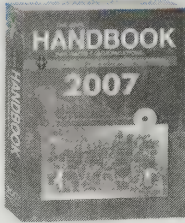




# ARRL BOOKS

## The ARRL Handbook for Radio Amateurs

The most complete update in a decade! Entire sections are updated: analog and digital signals and components; surface-mount components; high-speed multimedia (HSM); previously unpublished antennas and advice on baluns; satellites and EME, now with new phase 3E details; oscillators, DSP and software radio design; a new chapter with Internet tips for hams, wireless fidelity (Wi-Fi) and other wireless and PC technology.



**Thorough coverage of theory, references and practical projects.** Here is an unmatched source for building receivers, transceivers, power supplies, RF amplifiers, station accessories and antenna construction projects. Now with more antenna projects and a 10-W, 60-meter SSB transceiver! Something for all skill levels.

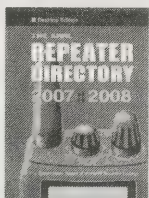
**Includes ARRL Handbook CD** (version 9.0) – the fully searchable and complete book on CD-ROM (including many color images).

**Softcover w/ CD \$39.95**

**Hardcover w/ CD \$54.95**

## Ham Radio FAQ

You've got questions . . . We've got answers! The ARRL Lab's Technical Information Service and "The doctor" have been answering ham's questions for nearly 8 decades. This book is a compilation of actual questions and their answers. Also includes a reference chapter. **HRO Price: \$14.95**



## ARRL 2007-08 Repeater Directory

**Now in two sizes: Desktop and Pocket Size**

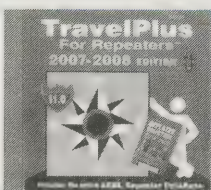
- Thousands of FM voice and ATV repeater frequencies.
- Latest directory of Frequency Coordinators.

- Coverage of North, Central, South America, & some listings in Europe and the Middle East.
- Now including IRLP (Internet linked) nodes.

**Pocket Size \$10.95 Desktop size \$15.95**

## Software on CD

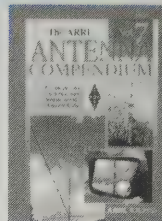
### TravelPlus™ for Repeaters



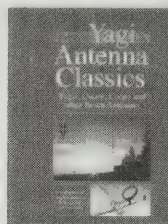
2007-2008 edition. With this traveling companion, you'll never be alone on the road. Locate ham radio repeaters on any US or Canadian travel route using this map-based software. Point and click. It's that easy. Includes the entire ARRL Repeater Database. **HRO Price: \$39.95**

## ARRL Antenna Compendium Volume 7

43 all new articles! Nine articles deal with low-band antennas and operating, 4 on antennas for 10 meters and many more. Learn how to motorize a tower, how to safely put up a through-the-roof antenna system. CD-ROM included with propagation prediction software! **HRO Price \$24.95**

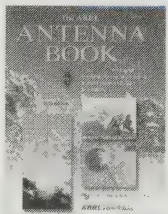


### Yagi Antenna Classics



This collection of articles covering all types of beam antennas was taken from QST, QEX, NJ and other ARRL publications. Written by some of the best known authors on the subject, the articles provide the reader with a historical perspective, novel ideas and computer optimized designs. **HRO Price: \$17.95**

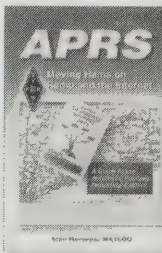
## The ARRL Antenna Book 21st Edition



Hams and professionals will find projects and practical information on designing, building, and installing almost any imaginable type of antenna. Select and use the proper feed line and antenna tuner. Expanded coverage of low frequency antennas. Greatly expanded coverage of elevation angles needed for world-wide HF propagation. New chapters cover the fundamentals, including the effects of irregular local terrain, plus more information on mobile and maritime antennas. Software included (MAC and PC). **Retail \$39.95**

## APRS Moving Hams on Radio and the Internet

Your one stop for quick-and-easy instructions for installing and using the exciting new APRS software. Anyone with a packet station and computer can join the fun. APRS provides a real-time map display of participating stations. When used with a GPS receiver, it is ideal for tracking moving stations. Separate sections cover DOS, Windows and MAC platforms. Chapters include custom installation, map-making, hardware requirements, and even specialized uses such as direction finding, telemetry and DX plotting. **\$17.95**



## Stealth Amateur Radio



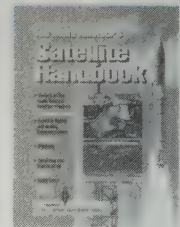
**Operate from Anywhere**  
Kirk A. Kleinschmidt, NTOZ

Set up and operate a low power (QRP) station without calling attention to yourself. Install safe antennas, including indoor antennas. Build invisible antennas. Install and operate a portable station from most anywhere. Handle interference to and from your station to nearby consumer electronics devices. **HRO Price \$14.95**

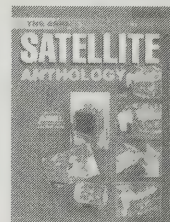
## Satellites & Space

### The Radio Amateurs Satellite Handbook

By Martin Davidoff, K2UBC (author of the highly acclaimed predecessor, *The Satellite Experimenter's Handbook*).



The most comprehensive book ever written about amateur satellites! Long-time satellite operators and beginners will enjoy its in-depth coverage: setting up a station, choosing the right antenna for the right satellite, and tracking the "birds." Includes operating details for every active amateur satellite, the upcoming Phase 3D satellite, and all Amateur Radio operations from the US Space Shuttles (SAREX) and Russian Mir space station. Thorough appendices covering profiles of computer programs, Internet sites, FCC Rules, and a complete history of amateur satellite and space operations. **HRO Price \$24.95**



### Satellite Anthology, 5th Edition

Here are the best articles on current (and future!) amateur spacecraft from QST, The AMSAT Journal,

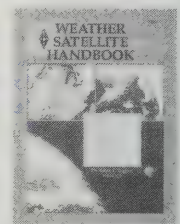
the World Wide Web and other sources. We've included recent satellite columns from RadCom (Great Britain), Radio ZS (South Africa) and Amateur Radio (Australia). Includes specific operating details for the newest amateur satellites! **HRO Price \$15**

## Weather Satellite Handbook

**An easy-to-use**

reference for anyone interested in viewing our world from space. The expanded 5th

edition has an interface project that allows you to capture images from various weather satellites and HF WEFAX broadcasts (a kit is available). You'll learn how weather satellites function, how to build or modify your own receiving equipment and how to buy or build the right antennas. **\$20. Companion software** (revised for the 5th edition) available for IBM PCs and compatibles. **\$10**





# BOOKS / MAPS / SOFTWARE / CD-ROMs

## ARRL TECHNICAL BOOKS

HK	Hints and Kinks (16th ed.)
ITRFD	Intro to Radio Freq. Design
LBD	Low Band DXing
MEM	Microwave Experimenter Manual
OM	Operating Manual
PDOYA	Yagi Design
RASH	The Radio Amateur's Satellite Handbook
Reflections	SWR Theory
RFE	RF Exposure and You
RFI	Radio Frequency Interference
RSGB-Awards	Awards Book
RSGB-Opman	Amateur Radio Operating Manual
RSGB-RCH	Radio Communication Handbook
RSGB-VHF	VHF / UHF Handbook
SA	Satellite Anthology
SEH	Satellite Experimenters Handbook
SSS	Spread Spectrum Source Book
TFRB	FCC Rule Book (13th ed.)
TLT	Transmission Line Transformers
TAH	ARRL 200 Handbook
WSH	Weather Satellite Handbook

## ARRL LISTINGS

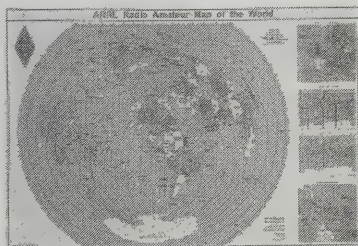
DXCC LIST	Official ARRL DXCC List
LB	Log Book
ND	Net Directory
RD	Repeater Directory

## ARRL READING

CQGS	CQ Ghost Ship
DVQTH	Death Valley QTH
DXBD	DX Brings Danger
DXCC Companion	DX Guidebook
HFNH	Help for New Hams
MBQ	Murder by QRM
NCJ	Bi-Monthly National Contest Magazine
NS	Night Signals
NN	Novice Notes
QRP NOTE	QRP Notebook
QST	Monthly Magazine of ARRL
SOSAM	SOS at Midnight
YVC	Your VHF Companion
ET	Easy Target Novel

## ARRL MAPS

WM	World Map (Azimuthal)
WM-R	World Map (Robinson)
GRID ATLAS	Grid Locator Atlas
GRID MAP	Grid Locator Map
MONA	Amateur Radio Map of North America



## ARRL ANTENNA BOOKS

AB	21st Antenna Book
ACVOL5	Antenna Compendium Vol. 5
ACVOL6	Antenna Compendium Vol. 6
ACVOL7	Antenna Compendium Vol. 7
RSGB-ANT	H.F. Antenna Book
RSGB-WIRE	Wire Antennas
YAD	Yagi Antenna Design

## Low Power Operation

### Low Power Communication

#### The Art and Science of QRP

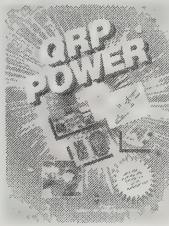
by Richard Arland, K7SZ

Here's the low-down on low power operating, from selecting gear, to advanced operating techniques, antennas, emergency communications, solar power, and more! 208 pages. **HRO Price: \$14.95**



### QRP Power

Whether you've just been bitten by the urge to operate flea power, or you've already discovered just how much fun it is to operate with 5 watts or less, this is the book you've been looking for. It's crammed with projects you can build and resource information you can use. In addition to the best recent QRP-related articles from QST, QEX and The ARRL Handbook, there's a new, in-depth article on NN1G's popular 40-40 transceiver. **\$12**



## Study With ARRL



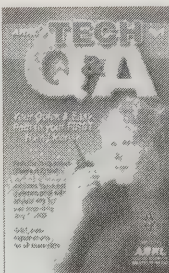
### Ham Radio License Manual

Includes the latest question pool with answer key, for use to pass the 35-question license test. Designed for self-

study or classroom use. Discover the unique mix of technology, public service, convenience, and fun that makes up ham radio. **Retail \$19.95**

## ARRL's Tech Q&A

Take the quick and easy path to your first ham license. Pass the 35-question Technician class examination by studying this question pool with brief, clear explanations. 3rd edition, for exams beginning July 1, 2003. **Retail \$12.95**



**GENVIDEO / Soft**  
Gen Class Video /  
IBM Exam

**TECHVIDEO / Soft**  
Tech Class Video /  
IBM Exam (New)

**HRLMI** Ham Radio License Manual

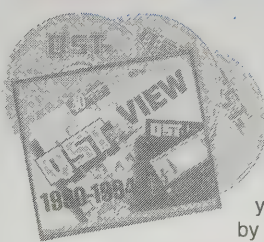
**TAGCLM** General Class Manual

**TAECLM** Extra Class Manual

**TFRB** FCC Rule Book

## ARRL CD-Roms

### QST View



Back issues of QST on CD-ROMs. All the ads, articles, columns and covers have been scanned in black-and-white to read on screen or print. Easy-to-use software included allows you to: search for articles

by title and author, select

specific year and issue, and browse individual articles. Available sets: 1990-94; 1985-89; 1980-84; 1975-79; 1970-74; 1965-69; 1960-64; 1950-59; 1940-49; 1930-39. Each set is an indexed. Requires Windows 3.1 or higher. **Each set \$39.95**

## ARRL Periodicals CD-ROM Sets

Each space-saving CD-ROM

is a compilation of an entire year's

periodicals! You'll

find the full text of

every QST (AR-

RL's membership

journal), QEX (The

ARRL Experimenter's

Exchange) and NCJ

(The National Contest

Journal). Includes every

article, column, product

review; drawing, table, illustration and photograph

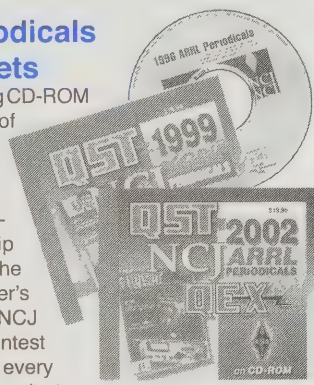
(many in color); and more than 1000 advertisement

images, indexed alphabetically by vendor and product.

Search engine finds information quickly by article titles,

call signs, names or just about any word. Bookmark your

favorites. Windows printing and clipboard support.



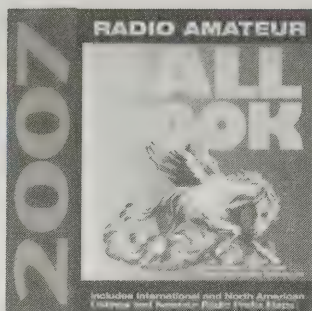
Part Number	Description	HRO Price
CDROM 15-29	QST Magazine 1915-1929 Editions	\$39.95
CDROM 30-39	QST Magazine 1930-1939 Editions	\$39.95
CDROM 40-49	QST Magazine 1940-1949 Editions	\$39.95
CDROM 50-59	QST Magazine 1950-1959 Editions	\$39.95
CDROM 60-64	QST Magazine 1960-1964 Editions	\$39.95
CDROM 65-69	QST Magazine 1965-1969 Editions	\$39.95
CDROM 70-74	QST Magazine 1970-1974 Editions	\$39.95
CDROM 75-79	QST Magazine 1975-1979 Editions	\$39.95
CDROM 80-84	QST Magazine 1980-1984 Editions	\$39.95
CDROM 85-89	QST Magazine 1985-1989 Editions	\$39.95
CDROM 90-94	QST Magazine 1990-1994 Editions	\$39.95
CDROM 95-99	QST Magazine 1995-1999 Editions	\$39.95
CDROM 95	QST, QEX, NCJ, HR on CD 1995	\$19.95
CDROM 96	QST, QEX, NCJ on CD 1996	\$19.95
CDROM 97	QST, QEX, NCJ on CD 1997	\$19.95
CDROM 98	QST, QEX, NCJ on CD 1998	\$19.95
CDROM 99	QST, QEX, NCJ on CD 1999	\$19.95
CDROM 2000	QST, QEX, NCJ on CD 2000	\$19.95
CDROM 2001	QST, QEX, NCJ on CD 2001	\$19.95
CDROM 2002	QST, QEX, NCJ on CD 2002	\$19.95
CDROM 2003	QST, QEX, NCJ on CD 2003	\$19.95
CDROM 2004	QST, QEX, NCJ on CD 2004	\$19.95
CDROM 2005	QST, QEX, NCJ on CD 2005	\$19.95
CDROM 2006	QST, QEX, NCJ on CD 2006	\$19.95



# CD-ROMs

## Radio Amateur Callbook CD-ROM 2007

HRO Price  
\$49.95



This is the most extensive radio amateur directory on the market. Incorporating both the North American and International editions of the world's most respected callbooks, it provides more than 1.6 million listings in more than 250 countries, islands, and dependencies. By including several countries not found in other directories, the Callbook offers unmatched world coverage.

- Windows / DOS platform.
- Data display by call sign, last name, city, license class, issue, and expiration dates.
- Search U.S. stations by call sign, last name, and city.
- Search international by call sign, last name, city. Text search by name, street, city, province, or region after selecting country.
- Unique sound output of Morse code alphabet can be used by the blind or anyone who wants to learn Morse code.
- Windows clipboard tool for single label

or applications. Import data into logging spread sheet, word processor, or label printing program. Logging program interface available.

- Listings of clubs, "Then and Now" call letter changes, military, and silent keys.
- Text files listing prefixes by countries (40 zones), DXCC countries list, census of amateur prefixes, QSL bureaus, reciprocal operating agreements, 10-meter beacons, 6-meter beacons, international "Q" signals, and much more.



**QRZ.COM**

## Ham Radio CD-ROM Version 28 – HRO Price \$24.95

Use the QRZ callsign data base with several ham radio logbook utilities. QRZWIN callsign search-and-retrieval software allows easy access to more than 600,000 names and addresses of US and Canadian hams. The full name, address and FCC license information is included with each record. QRZWIN provides editing and printing functions which make custom mailing lists easy. Import the information to your favorite word processor for advanced formatting and list processing. QRZ features an open database with documentation so users can create their own custom applications. Also on the CD: the complete text to FCC approved license examinations, questions and answers, current rules and regulations, and 100's of shareware utilities. For use with Windows 3.1, Windows 95, or DOS software.

## BUCKMASTER



## HamCall™ CD-ROM HRO Price \$50.00

HamCall™ contains more than 1,623,000 US and International call signs on one CD-ROM updated every month. When you buy a HamCall CD-ROM, it will contain the latest listings at that time. Your purchase entitles you to a FREE password to access the HamCall Internet search service for a full 6 months. This lets you search by callsign, name, address, class and more.

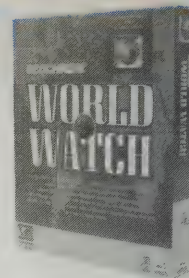
- Run HamCall from your hard drive.
- Ability to skip already printed labels.
- Double click any address to send email or a web address to visit it.
- Add your own notes to any call sign.
- Print entire field search results (US records only).
- Calculates short and long path distance and bearing.
- Choose display font and color.
- Shows country flag and map.
- Shows CQ, ITU zone, continent.
- History list shows each call sign entered..
- View and search internet profiles for more than 35,000 hams.
- Search for club, military, RACES, vanity and silent keys.
- Over 122,000 email addresses.
- Latitude/longitude for more than 90% of US and DX addresses. US lat/long is calculated from the street address for precision down to a few hundred feet.
- Easy to use main menu.
- Data displayed includes: call sign, name, address, license issue date, license expiration date, birth date, previous calls, previous class, grid square, county, time zone, area code, email address, QSL manager and WWW home page.
- Edit information, change addresses, add new records, delete edited records, add email addresses, phone numbers, fax numbers and add your own notes.

# CLOCKS

## GEOCHRON

### Computer Clock

## World Watch™ & Screen Saver HRO Price \$49.95



Keep time with the world. With Geochron World Watch Time Piece for Windows®, just glance at your computer screen to see whether the rest of the world is open for business. The current time for any city in the world is displayed in an attractive graphic. You can even set it up as a World Watch Screen Saver. Customize the display using various maps, user-defined cities, and map settings. The graphic shows you instantly which parts of the world are in sunlight and which are dark. Individual clocks across the bottom of your screen display local time for any locations you select. International Daylight Savings Time adjusts automatically. With orders of 20 or more units, the Geochron World Screen Saver can be customized to show your company name and logo. A pull-down menu allows further customizing. Available for Microsoft Windows® 3.1 and above. Windows '95/98/NT/2000 compatible.

### Wall Clock

## Standard GEOCHRON Global Time Indicator

A "must item" for a First Class Ham Shack.



Size: 34" x 22" x 5"

Geochron is a true global time indicator. At any moment, Geochron displays the correct time everywhere in the world – the week, date, the sun's declination and distribution of daylight and darkness on the earth's surface.

Geochron is available in four (4) models and a multitude of housing finishes and trim colors. Packaged for "drop shipment" anywhere in the world via UPS or DHL. Geochron can be surface mounted on the wall like a picture or recessed using optional mounting brackets.

Call HRO for special pricing opportunities.



## HL-1.5KFX

### HF/50MHz Linear Power Amplifier



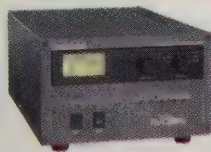
Auto Band Set

This compact and lightweight 1kW desktop HF/50MHz linear power amplifier has a maximum input power of 1.75kW. Our solid-state broadband power amp technology makes it the **smallest and lightest self-contained amplifier in the industry.**

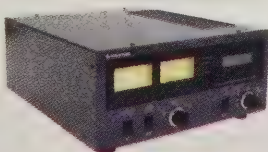
Typical output power is 1kW PEP/SSB on HF and 650W on 6m band with the drive power of 85-90W. Bands set automatically with the **built-in band decoder.** You can forget about the band setting when the amplifier is connected to your modern radio through **supplied band data cables for ICOM CI-V, DC voltage (ICOM, Yaesu), and RS-232C (Kenwood).** Manual band setting selectable as well.

All these data cables are included with the amplifier.

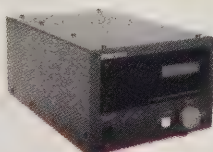
**NEW!**



**HL-1.2KFX**  
HF amp 750W out\*



**HL-2.5KFX**  
HF amp 1500w out\*



**HC-1.5KAT**  
HF 1.5KW Auto Tuner\*

\* These devices have not been authorized as required by the rules of the FCC. These devices are not, and may not be, offered for sale or lease, or sold or leased until authorization is obtained.

#### Features

- Lightest and most compact 1kW HF amplifier in the industry.
- The amplifier's decoder changes bands automatically with most ICOM, Kenwood, Yaesu.
- The amp utilizes an advanced 16 bit MPU (microprocessor) to run the various high speed protection circuits such as overdrive, high antenna SWR, DC overvoltage, band miss-set etc.
- Built in power supply.
- AC (200/220/235/240V) and (100/110/115/120V) selectable.
- Equipped with a control cable connection socket, for the HC-1.5KAT, auto antenna tuner by Tokyo Hy-Power Labs.
- Two antenna ports selectable from front panel.
- Great for desktop or DXpedition!

#### Specifications

**Frequency:**  
1.8 ~ 28MHz all amateur bands including WARC bands and 50MHz

**Mode:**  
SSB, CW, RTTY

**RF Drive:**  
85W typ. (100W max.)

**Output Power:**  
HF 1kW PEP max.  
50MHz 650W PEP max.

**Matching Transceivers for Auto Band Decoder:**  
Most modern ICOM, Yaesu, Kenwood

**Drain Voltage:**  
53V (when no RF drive)

**Drain Current:**  
40A max.

**Input Impedance:**  
50 OHM (unbalanced)

**Output Impedance:**  
50 OHM (unbalanced)

**Final Transistor:**  
SD2933 x 4 (MOS FET by ST micro)

**Circuit:**  
Class AB parallel push-pull

**Cooling Method:**  
Forced Air Cooling

**MPU:**  
PIC 18F452 x 2

**Multi-Meter:**  
Output Power - Pf 1Kw  
Drain Voltage - Vd 60V  
Drain Current - Id 50A

**Input/Output Connectors:**  
UHF SO-239

**AC Power:**  
AC 240V default (200/220/235) - 10 A max.  
AC 120V (100/110/115) - 20 A max.

**AC Consumption:**  
1.9kVA max. when TX

**Dimension:**  
10.7 x 5.6 x 14.3 inches  
(WxHxD)/272 x 142 x 363 mm

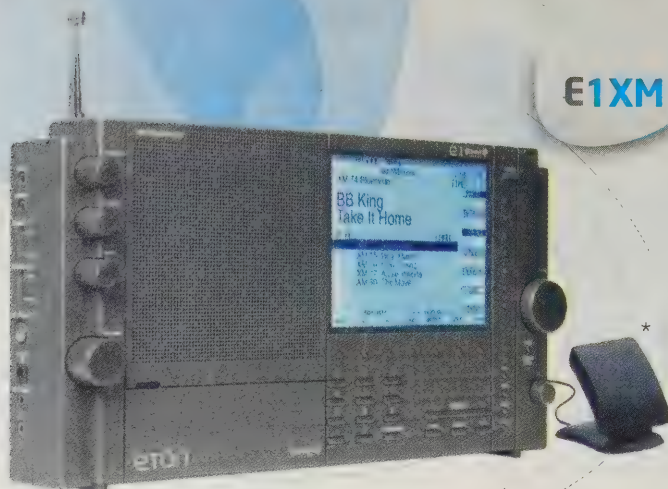
**Weight:**  
Approx. 20kgs. or 45.5lbs.

**Accessories Included:**  
AC Power Cord  
Band Decoder Cables included for Kenwood, ICOM and Yaesu  
Spare Fuses and Plugs  
User Manual

**Optional Items:**  
Auto Antenna Tuner (HC-1.5KAT)  
External Cooling Fan (HXT-1.5KF for high duty cycle RTTY)



# Covering Radio Worldwide



## E1XM

**AM/FM/Shortwave (with SSB)/XM Satellite-Ready Radio**

- Covers AM, LW and shortwave from 100-30,000 KHz, including SSB; FM-stereo; XM Satellite radio
- 500 user programmable memories with alpha labeling, plus 1200 user definable country memories. A total of 1700 memories!
- Easy to use memory scan function
- Passband tuning and synchronous detector in AM and shortwave, greatly helps reject interference
- Superior tuning and reception

Dimensions: 13" x 7-1/2" x 2-1/2" and 33,3 x 18,8 x 6,6 cm (W x H x D), Weight: 4 lbs. 3 oz. and 1,900 kg  
Accessories: Owner's manual, AC adapter, Available in: Gunmetal

\*XM Satellite Radio service and antenna sold separately



## M

## AM/FM/Shortwave Radio

- AM/FM-stereo and 7 shortwave bands (49, 41, 31, 25, 22, 19 and 16 meter)
- Analog tuner with classic dial knob and digital display
- Rotary volume control
- Digital display shows frequency, time, sleep time and symbols for sleep timer and alarm activation
- Clock, sleep timer, alarm function

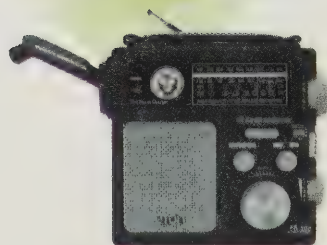
Dimensions: 2-1/2" x 4-1/2" x 3/4" (W x H x D) and 6,3x 11,4 x 1,9 cm (W x H x D), Weights: 4.5 oz and 0,128 kg  
Accessories: Owner's manual, Protective pouch, Earphones, Belt clip, Available in: Pearl



AM/FM/Shortwave Radio

- AM (530-1710 KHz), FM (88-108 MHz) and Shortwave - continuous coverage from 3 to 28 MHz. This includes 13 international broadcast bands (11, 13, 15, 16, 19, 22, 25, 31, 41, 49, 60, 75 and 90 meters)
- Highly sensitive and selective analog tuner circuitry with AM/SW Frequency Lock
- Rotary volume control
- Variable RF Gain control
- Inputs for supplementary AM/FM and shortwave antennas

Dimensions: 12-1/2" x 7" x 3-1/2" (W x H x D) and 31,5 x 17,5 x 8,9 cm (W x H x D), Weights: 3 lbs 4 oz and 1,480 kg. Accessories: Owner's manual, AC adapter. Available colors: Red, Silver



## FR

### Self-Powered AM/FM Radio with NOAA and TV-VHF

- AM and FM
- TV1 and TV2 - VHF channels 2-13
- NOAA weather - all 7 channels plus "Alert"
- 3 LED light system with emergency flash
- Can be powered from four different sources:
  - Built-in rechargeable Ni-MH battery
  - Dynamo Crank alone
  - 3 "AA" batteries
  - AC Adapter (not included)
- Cell-phone charger

Dimensions: 6-1/2" x 6" x 2-1/2" (W x H x D) and 16.8 x 15.2 x 6.4 cm (W x H x D), Weight: 1 lb. 4 oz. (568 g), Accessories: Owner's Manual, One-Year Warranty, carrying case, Available Colors: Silver, Black



**American  
Red Cross**

American Red Cross

**FR250**  
by Etón

**ANIRV Shortwave Radio with Fast Tune, Sleep and Call Phone Charger**



Dimensions: 8-1/2" x 5-7/8" x 2-1/2" (W x H x D) and 18.8 x 14.5 x 6.4 cm (W x H x D) Weight: 1 lb. 10.5 oz. 5.5 lbs. Accessories: Owner's Manual, Preparation Kit, Clean System Carrying Bag



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**etón**  
re\_inventing radio  
[www.etoncorp.com](http://www.etoncorp.com)



# HF AT HOME OR ON THE GO!



**HIT THE ROAD!**

## IC-7000

### COMPACT MULTI-BAND RIG

- HF/6M/2M
- 2 - 100 Watts Output Power
- General Coverage RX: 0.3-60 MHz
- Digital IF Filters
- Digital Voice Recorder

## IC-706MKIIG

### COMPACT HF/VHF/UHF ALL MODE TRANSCEIVER



## IC-703 PLUS

### HF/50 MHz ALL MODE QRP TRANSCEIVER



**GO MOBILE HF PLUS!**

*Visit your Icom dealer today!*

*Free literature: 425.450.6088*

*or [www.icomamerica.com](http://www.icomamerica.com)*



**Proud Sponsor**

## IC-718

- 100 Watt Output, Full Duty Cycle
- One-touch Band Switching
- RF Gain Control
- Built-in CW Keyer
- Built-in VOX



## IC-746PRO

- 100 Watt Output Power, Full Duty Cycle
- All Mode, Including RTTY
- 32 Bit IF-DSP + 24 Bit AD/DA Converter
- Enhanced RX Performance
- Selectable IF Filter Shapes for SSB + CW



## IC-756PROIII

- 100 Watt Output, Full Duty Cycle
- 32 Bit IF-DSP + 24 Bit AD/DA Converter
- +30dBm 3rd Order Intercept Point
- Low-distortion BPF Switching
- Real-time Spectrum Scope with Mini Scope



## IC-7800

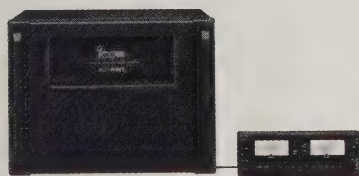
- Built-in 200 Watt Output, Full Duty Cycle
- Four 32 Bit IF-DSPs + 24 Bit AD/DA Converters
- 2 Completely Independent Receivers
- +40 dBm 3rd Order Intercept Point
- Selectable, "Build Your Own" IF Filter Shapes



## GET THE 1kW ADVANTAGE!

### IC-PW1

- 160M - 6M, All Band\*
- Full Duty Cycle
- Desktop Size with Removable Control Head
- Automatic Antenna Tuner Built-in
- Internal Power Supply



\*Frequency coverage may vary. Refer to owner's manual for exact frequency specs.



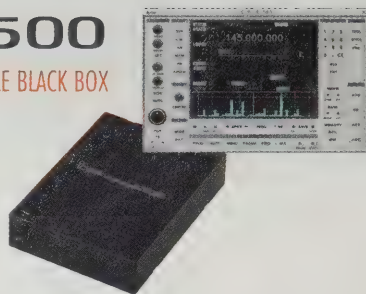
# It just got better!

## IC-PCR1500

THE WHOLE WORLD IN A LITTLE BLACK BOX

0.01 - 3299.99 MHz\*

AM, FM, WFM, USB, LSB, CW  
Single Antenna Port  
Three Operating Screen Options  
Unlimited Memory Channels  
PCR Digital Record



## IC-PCR2500

DUAL RECEIVERS IN ONE BOX

0.01 - 3299.99 MHz\*

AM, FM, WFM, SSB, CW, DV and P25 (Main)  
AM, FM and WFM (Sub)  
Unlimited Memory Channels  
D-STAR Compatible (Option UT-118)  
P25 (Option UT-122)



## IC-R1500

MOBILE OR PC CONTROLLED SINGLE BAND RECEIVER

0.01 - 3299.99 MHz\*

AM, FM, WFM, USB, LSB, CW  
Single Antenna Port  
Single Display  
1000 Memory Channels  
PCR Upgradeable



## IC-R2500

MOBILE OR PC CONTROLLED DUAL BAND RECEIVER

0.01 - 3299.99 MHz\*

AM, FM, WFM, SSB, CW, DV and P25 (Main)  
AM, FM and WFM (Sub)  
1000 Memory Channels  
D-STAR Compatible (Option UT-118)  
P25 (Option UT-122)



Tuning in the world? Hear more of what's out there with Icom. From handhelds to PC controlled receivers, Icom's got you covered! Visit HRO today and tune in the world!

## IC-R75

WIDE BAND RECEIVER

0.03 - 60.0 MHz

Triple Conversion  
Twin Passband Tuning  
Digital Signal Processing (DSP)



## IC-R20

ADVANCED  
WIDE-BAND RECEIVER

0.150 - 3304.0 MHz\*

AM, FM, WFM, SSB, CW  
1000 Memory Channels  
Dual Watch Receiver  
4 Hour Digital Recorder



## IC-R3

SEE & HEAR  
WIDE-BAND RECEIVER

0.5 - 2450.0 MHz\*

AM, FM, WFM, TV  
Video/Audio Output Terminal  
450 Memory Channels  
Li-Ion Battery



## IC-R5

COMPACT  
WIDE-BAND RECEIVER

0.5 - 1300.0 MHz\*

AM, FM, WFM  
1250 Memory Channels  
CTCSS/DTCS Decode  
Weather Alert





**NEW IC-R9500**

*Tune in and expand your world!*

## Introducing Icom's **IC-R9500** Wide Band Receiver

We've raised the bar with our super performance, multiple function wide band "measuring" receiver. The IC-R9500 has normal and wide spectrum scope functions. With five roofing filters before the first amp, two independent 32 bit floating point DSP processors, and 7-inch wide color TFT LCD, this is something to get excited about!



### Features:

- 0.005 - 3335.000 MHz\*
- USB, LSB, CW, FSK, FM, WFM, AM
- 1020 Alphanumeric Memories
- P25 (Option UT-122)
- Five Roofing Filters
- Dual DSP
- Digital IF Filter
- Multi-function Spectrum Scope

- 7-inch TFT LCD Display
- Noise Blanker
- Noise Reduction
- Multi-scan Functions
- Voice Synthesizer
- Digital Voice Recorder
- USB Connector
- Receive Assist Functions

\*Frequency coverage may vary. Refer to owner's manual for exact frequency specs.



# 2m and 70cm digital voice meet Main Street, U.S.A.!

**ID-RP2000V**  
**ID-RP4000V**

Meet the future of amateur radio, today. D-STAR repeater systems are coming to more locations around the country. Jump in! D-STAR forum:  
[www.icomamerica.com/support/forums](http://www.icomamerica.com/support/forums)

**ICOM ID-RP4000V**  
UHF Digital Voice System

## D-PRS®

The low-speed data port found in Icom D-STAR handheld radios is compatible with a GPS NMEA data interface. With GPS data integrated into the D-STAR digital data stream, your location data is forwarded to the D-PRS server where gateway software connects you to the APRS® reporting system. The interface is built-in to D-STAR radios — no separate TNC and transceiver required!

## DIGITAL SIGNALS = PIN-DROP CLARITY

Since D-STAR is fully digital at the terminal-to-terminal level, the network provides noise-free stable communications as if all of the D-STAR terminals are located in the same area, regardless of real geographical separation!

## INTEROPERABILITY, CROSS BAND OPERATION

D-STAR digital voice radios can communicate even when they are on different bands. For example, a 2m DV radio can talk to a 70cm or 1.2GHz DV radio via repeater(s). Make D-STAR your new emergency communications standard.

## THE FUTURE IS GLOBAL

Take your 2m/70cm nationwide... even worldwide! Icom D-STAR capable handhelds and mobiles, like the IC-U82 and IC-2200H shown below, now allow your local or regional communications to go global when used with these new D-STAR repeaters. It's a whole new ball game!

### IC-V82 & IC-U82

**DIGITAL UPGRADEABLE FOR 2m OR 70cm**

7 Watt VHF or 5 Watt UHF • 200 Alphanumeric Memories • Digital Voice & Data w/Optional UT-118  
Optional Callsign Squelch • CTCSS & DTCS Encode/Decode w/Tone Scan • Weather Alert



**D-STAR optional**

**D-STAR optional**

**D-STAR ready**

### IC-91A & IC-91AD

**ADVANCED ANALOG & DIGITAL DUAL BANDER**

5 Watts 2m and 70cm • 1300 Alphanumeric Memories  
Digital Voice/Data Ready (91AD) or Upgradeable  
w/Optional UT-118 (91A) • 495kHz - 999.990MHz\* • V/V,  
U/U or V/U • Weather Alert • Dual Watch • Li-ion Power



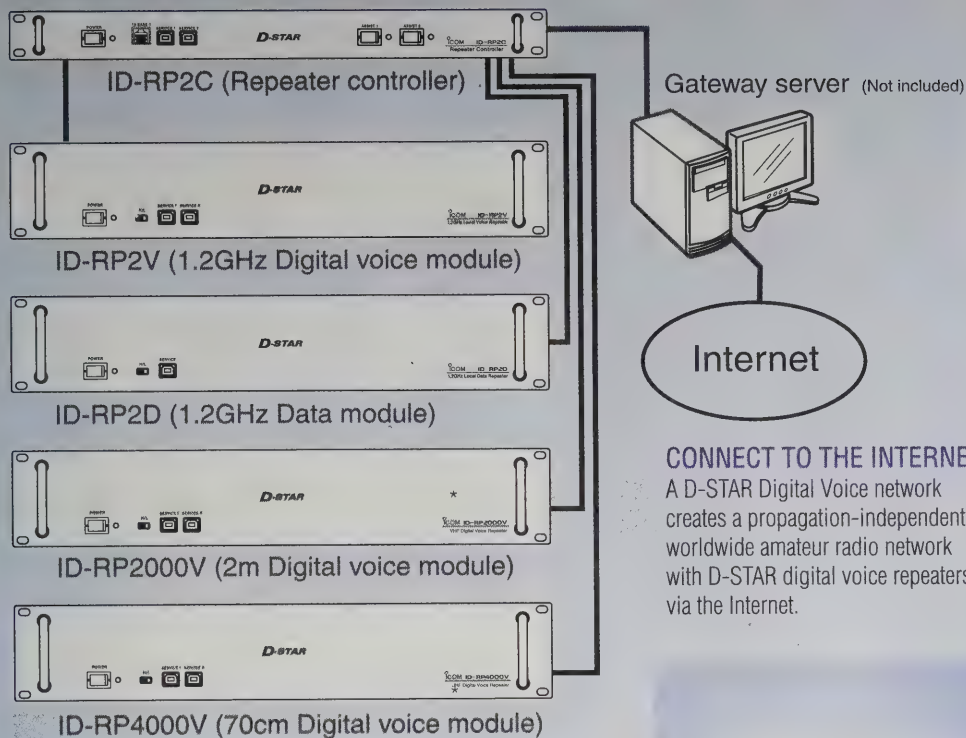
**ICOM®**

\*Frequency coverage may vary. Refer to owner's manual for exact frequency specs.

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## D-STAR REPEATER SYSTEM



**D-STAR:**  
CONNECT ACROSS  
MILES INSTEAD  
OF METERS!

**DIGITAL**



### ID-1 **D-STAR ready** GO DIGITAL ON 1.2GHz

10 Watt • High Speed Digital Data, Digital Voice, Analog Voice (FM) • Wireless Internet/Network Capable • PC Control via USB Port • Digital Callsign & Digital Code Squelch



### NEW IC-2820H **D-STAR optional** D-STAR UPGRADEABLE 2m & 70cm

50/15/5W RF Output Levels • RX: 118-173.995, 375-549.995, 810-999.99MHz\* • Analog/Digital Voice with GPS (Optional UT-123) • 500 Alpha-numeric Memories • Diversity Receive Capable



### ID-800H **D-STAR optional** GO DIGITAL ON 2m & 70cm

55 Watt VHF/50 Watt UHF • Wide RX: 118-173, 230-549, 810.999 MHz\* • Analog/Digital Voice & Data • Callsign Squelch • CTCSS & DTCS Encode/Decode w/Tone Scan

### ID-RP2C REPEATER CONTROLLER

The cornerstone of the D-STAR repeater system. Handles up to four RF modules. Basic in-band or crossband operation. Linking capabilities through the internet and future 10GHz backbone products.

### ID-RP2D 23CM DIGITAL DATA MODULE

Access point with a data rate of 128kbps. Depending on the system setup, set up an email and/or file server for EmComm support. Perfect for web applications or support via internet connection.

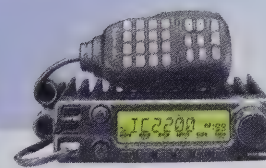
### ID-RP2V 23CM DIGITAL VOICE MODULE

### ID-RP4000V 70CM DIGITAL VOICE MODULE

### ID-RP2000V 2M DIGITAL VOICE MODULE

Finally, commercially available crossband repeaters! With proper callsign programming in any D-STAR compatible mobile or portable, the Icom D-STAR repeaters will automatically route your signal to any other RF module connected to a common RP2. With simple repeater commands, you can direct your communications through any of the RF modules or across the world via the gateway.

### UT-123 GPS MODULE AND ANTENNA



### IC-2200H **D-STAR optional** DIGITAL UPGRADEABLE FOR 2m

65 Watt • 207 Alphanumeric Memories • Digital Voice & Data w/Optional UT-118 • Optional Callsign Squelch • CTCSS & DTCS Encode/Decode w/Tone Scan • Weather Alert



# Linking the World via VoIP

Keep in Touch with  
World Friend by VoIP

**WIRES-II**

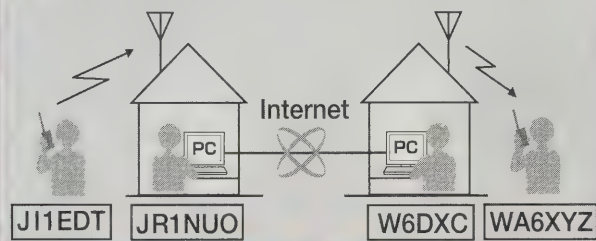
**YAESU**  
Chances of the World's Top DX Sites

## Wide-Coverage Internet Repeater Enhancement System

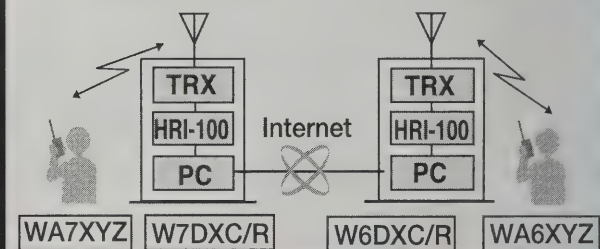
**VoIP BRINGS AN EXCITING NEW DIMENSION TO  
LONG-DISTANCE COMMUNICATION!**

Expand the coverage area of your hand-held or mobile with **WiRES™-II**. WiRES-II can link repeaters and base stations anywhere, using our advanced VoIP technology. Expand your club repeater's range across the nation, or even to Europe and Asia.

Internet "bridge" using home stations to establish link.



Repeaters with **WIRES™-II**



## **WIRES™-II** Amateur Radio Internet Linking Kit



**HRI-100 Interface Box** (Requires 12 V DC Input)

• Optional Accessory: NC-72B AC Adapter



### Components

AP01 CD-ROM (Including Manual)  
Power Cable  
Data Cable (RS-232C DB-9 Plug)  
Data Cable (8-pin Mini-DIN Plug)  
Audio Cable (3.5 mm Plug) (2)  
**WiRES™-II User/Server Agreement**

### Work the world from your HT or mobile with **WiRES™-II**

- Yaesu's advanced, high-quality VoIP Internet linking system.
- Easy connections to your PC.
- No subscription fees.
- Link repeaters across the continent or around the world.
- Excellent voice quality.
- Worldwide DX coverage: Nodes in over 2000 locations worldwide. (\*some repeaters are for exclusive use only (SRG) and may not be accessed).

For the latest Yaesu news, visit us on the Internet:  
<http://www.vertexstandard.com>

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# Tougher than Tough!

YAESU's rugged new VX-120/170 Series of 2-m or 70-cm Hand-helds aren't just built tough. They're submersible, have a huge, easy-to-read LCD, and they provide big, bold audio (almost 3/4 of a Watt) from the huge internal speaker!



The VX-120-170 Series are compact, high-performance Submersible FM hand-helds providing up to five Watts of RF power, along with big audio output (700 mW) for the 2-m or 70-cm amateur bands.

Protected against water ingress to IPX7 specifications (submersion for up to 3 feet/1 meter for 30 minutes), the VX-120-170 Series feature long operating times, thanks to the supplied 1400 mAh Ni-MH Battery Pack. The 8-key VX-120 Series provides the utmost in operation simplicity, while the 16-key VX-170 Series includes direct keypad frequency entry and direct DTMF input. And both models provide quick, one-touch access to YAESU's exciting and fun WiRES-II™ VoIP Internet Linking system!

- 5W FM Transceiver
- Wide Receiver Coverage
- IPX7 Submersible 3 feet (1m) for 30 minutes
- Loud Audio 700 mW via Internal Speaker
- Long Life Battery FNB-83 (7.2 V/1400 mAh) included
- Huge Display (LCD)
- Enhanced Paging and Code Squelch (EPCS)
- CTCSS/DCS included
- Security Password Feature
- Direct Keypad Frequency Entry (VX-170 Series)
- Transmit Time-Out Timer (TOT)
- Automatic Power-Off (APO)
- Automatic Repeater Shift (ARS)
- YAESU's exclusive ARTS™ (Auto-Range Transponder System)
- RF Squelch Circuit
- 200 Standard Memory Channels with 10 Memory Banks
- Alpha-Numeric Labeling of Memories
- Dual Watch (Priority Channel Scanning)
- Emergency Feature
- Smart Search Memories

FM Mono Band Hand Held Transceiver  
**VX-120/VX-170 Series**  
 (8 key Version / 16 key Version)  
 VX-120/170 (VHF) VX-127/177 (UHF)

**IPX7**  
 Submersible  
 3 feet (1m) for 30 min.

**Huge  
 LCD**

**Big  
 700 mW  
 Audio!**

**1400 mAh  
 Long Life  
 Battery**



Waterproofing specifications are assured only when using the genuine YAESU FNB-83 Battery Pack or FBA-25A Battery Holder. The use of after-market batteries or other accessories may compromise the effectiveness of the waterproofing.

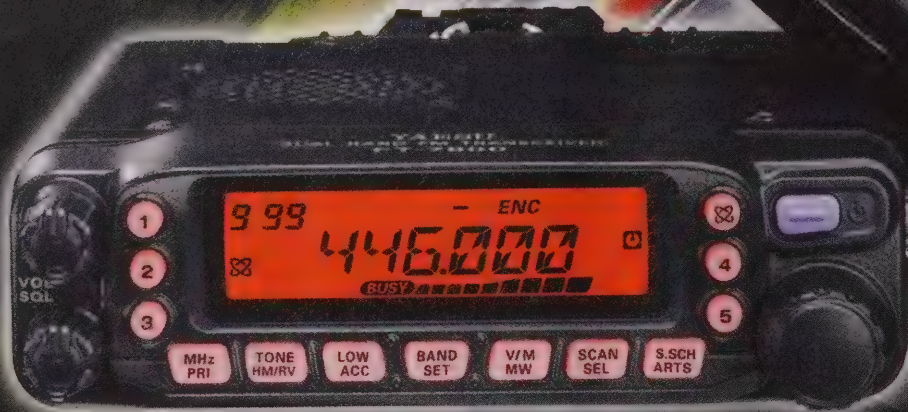
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 Choice of the World's top DX'ers™  
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# Get "Back to Basics" with YAESU's FM Dual Band Mobile One-Touch Operation/Wide Receiver Coverage Included



**DUAL BAND**

50 W 2 m/70 cm\* Dual Band FM Mobile  
**FT-7800R** \*70 cm 35 W

**QUAD BAND  
DUAL RECEIVE**



50 W 10 m/6 m/2 m/70 cm\* Quad Band FM Mobile  
**FT-8900R** \*70 cm 35 W

**DUAL BAND  
DUAL RECEIVE**



50 W 2 m/70 cm\* Dual Band FM Mobile  
**FT-8800R** \*70 cm 35 W

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# The radio... FT DX 9000

## DISTINGUISHED

Experience  
400 imposing Watts,  
and call with confidence!



Photograph depicts after-market keyboard, keyer paddle, and monitor, not supplied with transceiver. Display image simulated and may differ in actual use.

The FT DX 9000MP's Power Amplifier stage utilizes SD2931 MOS FET devices in a parallel, push-pull configuration, a conservative design that permits ultra-clean Class-A operation at a full 100 Watts of output, with continuous bias adjustment between Classes A and AB available on the front panel. If you have a professional microphone with a balanced "Cannon" (XLR) connector, you may connect it directly to the matching connector on the front panel, then use our exclusive three-band Parametric Microphone Equalizer to adjust the center frequency, bandwidth, and equalizer gain in the bass, mid-range, and treble frequency ranges.

**YAESU engineers take signal quality seriously, because we know you do, too!**

### HF/50 MHz Transceiver

#### FT DX 9000MP

##### 400 W Special Order Version

Two Pairs of Meters, plus LCD Window; Data Management Unit and Flash Memory Slot Built In. Main/Sub Receiver VRF, plus Full Dual Receive Capability, External 50 V/24 A Switching Regulator Power Supply and Speaker with Audio Filters

Display color (Umber or Light Blue) may be selected at the time of purchase. Modification from 400 to 200 W not possible.



### HF/50 MHz Transceiver

#### FT DX 9000D 200 W Version

Large TFT, Data Management Unit and Flash Memory Slot Built In, Main/Sub Receiver VRF, plus Full Dual Receive Capability, Three  $\mu$ -Tuning Modules for 160 - 20 M, 50 V/12 A Internal Switching Regulator Power Supply



### HF/50 MHz Transceiver

#### FT DX 9000 Contest 200 W Custom-Configurable Version

Two Pairs of Meters, plus LCD Window, VRF Input Preselector Filter, Three Key Jacks, and Dual Headphone Jacks, 50 V/12 A Internal Switching Regulator Power Supply

Display color (Umber or Light Blue) may be selected at the time of purchase. Modification from 200- to 400-Watt version not available.

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# THE PROFESSIONAL STANDARD

The compact desk-top VR-5000 is Yaesu's most versatile Communications Receiver ever! With ultra-wide frequency coverage and a host of operating features, you'll be on top of the monitoring action with the VR-5000!

- **CONTINUOUS FREQUENCY COVERAGE:** 100 kHz ~ 2.6 GHz / LSB, USB, CW, AM-Narrow, AM, Wide AM, FM-Narrow, and Wide FM (cellular frequencies are blocked)
- **2000 MEMORY CHANNELS / 100 MEMORY GROUPS**
- **DUAL RECEIVE**
- **DIGITAL SIGNAL PROCESSING / BANDPASS FILTER, NOISE REDUCTION, NOTCH FILTER, NARROW CW PEAK FILTER** (Optional DVS-1 requires)
- **REAL-TIME SPECTRUM SCOPE**
- **WORLD CLOCK WITH UTC/LOCAL SETTINGS**
- **PRESET SHORTWAVE BROADCAST STATION MEMORY BANK**
- **EXTENSIVE SCANNING CAPABILITY/SMART SEARCH™**

## • AND MUCH, MUCH MORE...

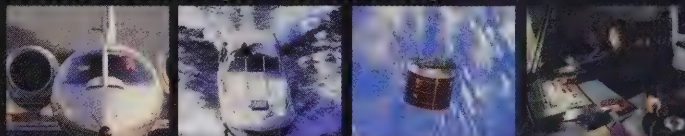
• "RF Tune" Front-end Preselector (1.89-1000 MHz) • 20 dB Attenuator for strong signal environments • IF Noise Blanker • DVS-4 Digital Voice Recorder (option) with two memories of up to 8 seconds each • 10.7 MHz IF Output Jack • Field Strength Meter • Audio Tone Control • All-Mode Squelch Control for silent monitoring • Password-protected Panel and Dial "Lock" feature • Display Dimmer/Contrast Control • Clone Capability for copying memory information from one VR-5000 to another • Personal Computer Interface Port • Two Antenna Ports • Audio Wave Meter provides display of incoming signal's wave characteristics

## COMMUNICATIONS RECEIVER

# VR-5000

0.1~2599.99998MHz\*  
LSB/USB/CW/AM-N/AM/  
WAM/FM-N/WFM  
\*Cellular blocked

Enjoy the wide world of communications monitoring with the action-packed VR-5000, available from your Yaesu Dealer today!



### Wideband Receiver

## VR-120D

- Wideband Coverage: 0.1-1299.995\* MHz AM/FM/Wide-FM
- Rugged outdoor-ready case construction
- Ultra-long battery life
- BNC-type antenna connector
- Straightforward 4-button operation
- Versatile 640-channel memory system



### All-Mode Wideband Receiver

## VR-500

- Frequency coverage : 0.1-1299.99995 MHz\*\*
- Modes : NFM, WFM, AM, USB, LSB, CW
- Multiple Power Source Capability
- Polycarbonate Case
- Real-Time 60-ch\* Band Scope \*Range 8 MHz / Step 100kHz
- Full Illumination For Display And Keypad
- Convenient "Preset" Operating Mode
- Front-end 20 dB Attenuator



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# Conquer the Elements!



**IPX7**  
Submersible  
3 feet (1m) for 30 min.

**5 W Heavy Duty Submersible  
2 m/70 cm Dual Band FM Hand held  
VX-6R**



**IPX7**  
Submersible  
3 feet (1m) for 30 min.

**5 W Ultra-Rugged, Submersible  
6 m/2 m/70 cm Tri-Band FM Hand held  
VX-7R/VX-7RB**  
(220 MHz: 300 mW)

**6 m / 2 m / 70 cm  
Tri-Band**



**Extreme ruggedness,  
outstanding audio,  
ease of operation, and  
new emergency features**

**2 m / 70 cm  
Dual Band**

**5 W Heavy Duty  
2 m/70 cm Dual Band FM Hand held  
FT-60R**



**1.5 W Ultra Compact  
2 m/70 cm Dual Band  
FM Hand held  
VX-2R**

**2 m / 70 cm  
Dual Band**

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# A TOUGH RADIO FOR A TOUGH WORLD!

The ruggedly-built new FT-1802M brings you Yaesu's legendary mechanical toughness, along with outstanding receiver performance and crisp, clean audio that will get your message through!



- 50 Watts of RF Power Output.
- Extended Receive: 136 – 174 MHz.
- Keyboard entry of frequencies directly from microphone.
- 221 Memory Channels with Alpha-numeric labeling.
- Eight Memory Banks for organizing Memory Channels.
- Dedicated 10-channel NOAA Weather Broadcast Channel Bank (U.S. version).
- Adjustable Mic Gain, and Wide/Narrow Deviation & Receiver Bandwidth.
- Built-in CTCSS and DCS Encoder/Decoder circuits.
- CW Trainer: Practice Morse Code between QSOs!
- Security Password to help prevent unauthorized use.



Actual Size

Ultra Rugged 50-W VHF FM Transceiver

## FT-1802M



25-W 2 m Rugged FM Mobile  
FT-2800M

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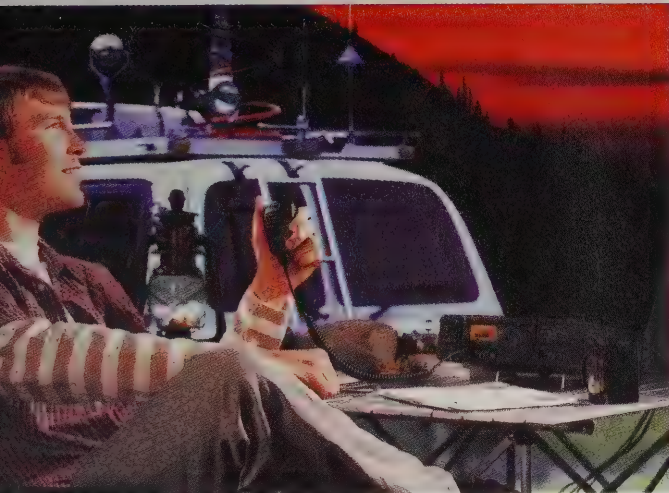
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# The Hottest Field Gear Anywhere!



HF/VHF/UHF Portable Operation  
Just Got a Lot More Powerful!

**FT-897D** **TCXO** **DSP** **60 m Band**

HF/50/144/430 MHz

100 W All Mode Transceiver (144 MHz 50 W/430 MHz 20 W)



HF/VHF/UHF Multimode Mobile Transceiver,  
now Including Built-in DSP

**FT-857D** **DSP** **60 m Band**

HF/50/144/430 MHz

100 W All Mode Transceiver (144 MHz 50 W/430 MHz 20 W)

**Automatic Matching for  
FT-897/857 Series Transceivers**

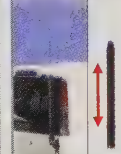


**FC-40**

Automatic-Matching  
200-Memory  
Antenna Tuner  
(160 m ~ 6 m Band)

**WATERPROOF**

**Mobile Auto-Resonating 7~430 MHz for  
FT-897/857 Series Transceivers**



**ATAS-120A**

Active Tuning Antenna System  
(no separate tuner required)

VHF/UHF  
Base RadialKit  
ATBK-100 for  
ATAS-120A.



**REAL PERFORMANCE,  
REALLY PORTABLE**

**FT-817ND**

HF/50/144/430 MHz

5 W All Mode Transceiver  
(AM 1.5 W)

**60 m Band**

**ATAS-25**  
Manually-Tuned Portable Antenna



For the latest Yaesu news, visit us on the Internet:  
<http://www.vertexstandard.com>

Specifications subject to change without notice. Some accessories and/or options may be standard in certain areas. Frequency coverage may differ in some countries. Check with your local Yaesu Dealer for specific details.

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Choice of the World's top DX'ers™

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Listen to the Future

## KENWOOD SKYCOMMAND TURN IT ON!

**Kenwood SkyCommand has FCC approval.**

Allows Global communication through remote operation on HF frequencies at home or in the field utilizing Kenwood's TS-2000 series transceivers.

Kenwood's TH-D7AG or TM-D700A required for remote use.

Perfect for use in hurricane or tornado zones, as well as Search and Rescue areas for Long Distance Communications when other normal modes of communications are out.

A great tool to monitor propagation while doing other things at home!

No cables or adaptors to fool with or buy!

No software or computer required!!

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Ease of use.



*See your local dealer for details.*

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Customer Support: (310) 639-4200 Fax: (310) 537-8235

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# KENWOOD

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# TS-480

The Perfect Remote Base Transceiver

## Straight Out of the Box!



- The perfect internet base transceiver - straight out of the box!
- Easy to operate
- The size makes it great for base, mobile or portable operation.
- Free VoIP/Control software downloads at [Kenwoodusa.com](http://Kenwoodusa.com).
- Incredible RX specifications.

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## Kenwood & AvMap

### The Ultimate APRS® Combination



TM-D700A



AvMap G4T

**Two Great Companies...Providing One Outstanding Solution!**

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The ARRL

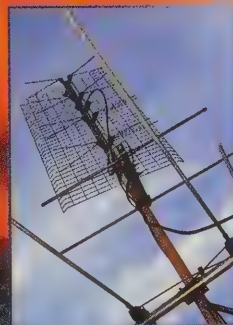
# ANTENNA BOOK



21<sup>st</sup> Edition

Retail **\$44.95**  
Available from your  
favorite HRO store!

The *ultimate* reference  
for Amateur Radio antennas,  
transmission lines and  
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INSIDE: Includes the fully  
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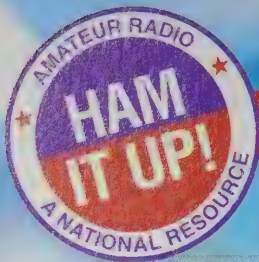


Published by:



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AMATEUR RADIO

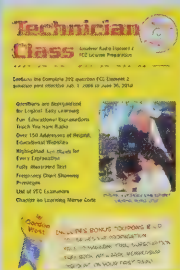




# Study with the best!

**FCC License Study Materials**  
by Gordon West, WB6NOA and The W5YI Group

## Technician Class



**Technician Class** manual for the 2006-10 entry-level exam! Gordo has reorganized the questions into logical topic groups for easier learning! Key words are highlighted in the explanations to help you remember the material for test success.

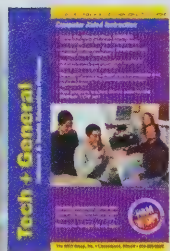
Web addresses for more than 150 helpful, educational sites. Bonus audio CD teaches VHF propagation. **GWTM \$18.95**

### Tech Book & Software Package

Package includes Gordo's book and Windows program that allows you to study at your computer and take practice exams. Gordo's explanations from the book are now on the software! With free Part 97 Rule Book. **NCS \$39.95**

### Tech Audio Course on CD

Technician Theory Course recorded by Gordo walks you through what you need to know for the Element 2 exam. Great study companion to his *Technician Class* book, and an excellent study aid if you spend a lot of time in your car or truck! 4 audio CDs. **GWTW \$27.95**



**Tech + General Software Value Pack** Includes *Technician Class* and *General Class* books, plus software for the Elements 2 and 3 exams, and bonus W5YI Morse code teacher software. Includes free Part 97 Rule Book. Get into ham radio and upgrade to the

worldwide HF bands all with one educational package! No CW test! **TPG \$69.95**

### Learn Morse Code for HF Fun!

In-depth CD/6-tape, audio courses recorded by Gordo:

0-5 wpm on 8 audio CDs **GW05 \$39.95**  
5-13 wpm on 6 audio tapes **GW13 \$29.95**  
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### Learn all about electronics with our Basic books

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Study at your computer and take practice exams. Software includes explanations from Gordo's book, scores your results and highlights areas that need further study. Includes free Part 97 Rule Book. **GUS \$44.95**

### General Audio Course on CD

General Theory Course recorded by Gordo is full of the sounds that bring ham radio to life! He talks you through the Element 3 theory to help you understand the material and get you ready for your upcoming exam. 4 audio CDs. **GWGW \$29.95**

### No Internet Connection Required!



**Ham Operator Software has All Exams**

Want to study at your computer without tying up your internet connection? This value pack includes the Tech, General and Extra class exams (Elements 2, 3, and 4) along with the

W5YI Morse code software and a free Part 97 Rule Book. Includes Gordo's answer explanations from his books! Everything you need to go all the way to the top!

Software only **HOS \$39.95**  
Software with all 3 West Books **HOSB \$89.95**

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**GROL-Plus** book covers FCC Elements 1, 3 & 8 for MROP, GROL, and Radar Endorsement **GROL \$39.95**

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## Extra Class



**Extra Class book** Go to the top with Gordo! 2002-2008 book includes all Element 4 questions and answers, along with Gordo's fun, educational explanations. Full of Gordo's great memory tricks for those tough math and electronic theory questions (wait 'til you meet "Eli the Ice Man")! **GWEM \$21.95**

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### Extra Audio Course - Now on CD

Extra Class Theory Course recorded by Gordo talks you through the difficult Element 4 theory to help you understand the material and get you ready for your upgrade to the top. On 7 long play audio CDs. **GWEW \$39.95**

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by Forrest M. Mims A great introduction for anyone who wants to learn the fundamentals of electronics. Includes 100 projects you can build, and great experiments that demonstrate how electricity works! **GSE \$19.95**

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These Mims classics teach you hands-on electronics! Study and build 100's of practical circuits and fun projects. Each volume contains several of his famous Mini Notebooks. Terrific ideas for science fair projects and a great way to learn about electronics! Useful reference guides for your workbench!

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# ANALYZERS

# SWR / WATT METERS

## Impedance Analyzer

### Timewave Technology



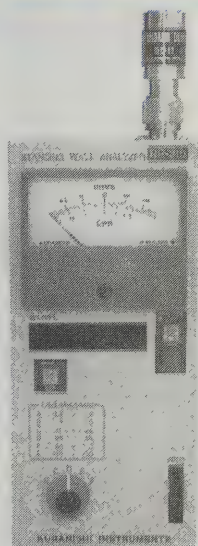
**TZ-900**  
**AntennaSmith™**  
**Antenna Impedance**  
**Analyzer**



Analyze an antenna system in real time with customized graphs for individual installations. Uses a full color TFT LCD graphic display. Show SWR plot or Smith chart. With the push of a button the data can be stored for later on-screen comparison, download, analysis, and print-out. Upload your saved files to compare new and old antennas on the display in real time. (Uses the included Timewave AS-1 software on the PC. Requires Windows 98 or XP.)

Quickly tune the cursor to check your antenna system at the desired frequency while looking at the big picture on the graph. The direct digital synthesizer makes a great RF signal generator. Easily calibrate to WWV with 1 Hz frequency resolution. **HRO Price \$1399.95**

## Antenna Analyzer



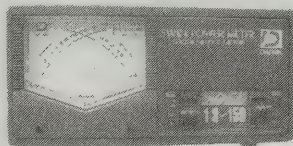
**BR-210**  
**Limited Quantity**

Laboratory grade precision instrument for analyzing antenna systems and other equipment without the need of a separate transmitter. Perform SWR and impedance measurements. Covers 1.8-170 MHz. Features a high precision meter, 500 mW 50 ohm dummy load, impedance measurements 12.5-300 ohm and SO-239 connector. **HRO Price \$429.95**



### CN-101

- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- Easy to read meter.
- PEP monitor function
- Illuminated meter, 12vdc plug provided.

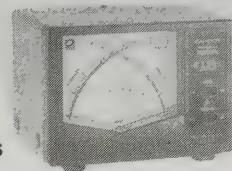


CN-101	
Frequency	1.8 - 150 MHz
Power Range	15 W / 50 / 1.5 KW
Power Rating	1.5 KW (1.8-60 MHz) 1 KW (144 MHz)
SWR Detection	4 W minimum
HRO Price	\$99.95

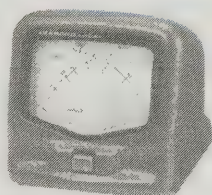
### CN-801

#### Professional Series

- Easy to read, illuminated, extra large meter face with mirrored graph in .5 watt increments.
- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- PEP monitor function
- Illuminated meter, 12vdc plug provided.



	CN-801H	CN-801V	CN-801S
Frequency	1.8-200 MHz	140-525 MHz	900-2500 MHz
Power Range FWD	20/200/2kW	20/200 W	2/20W
Impedance	50Ω	50Ω	50Ω
Connectors	SO-239	SO-239	N-Type
SWR	5 W	5 W	0.5 W
Detection	minimum	minimum	minimum
HRO Prices	\$129.95	\$149.95	\$229.95



## DIAMOND

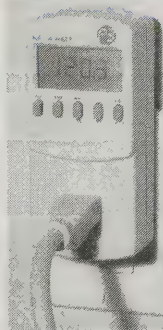
### SX-40C

Diamond RF SWR / Watt meters cover the full range of amateur applications. The SX-20C and SX-40C are the newest models. The SX-40C can be used on 220 MHz with a correction factor.

## Kilowatt Monitor

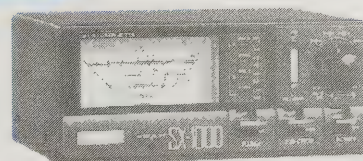
### Kill-A-Watt

Connect equipment into the Kill-A-Watt™ to assess its efficiency. A large LCD display counts consumption by the kilowatt hour just like utility companies. You can figure out your electrical expenses by the hour, day, week month, even an entire year. Monitor the quality of your power by displaying voltage, line frequency, and power factor.



**Specifications:**  
Operating Voltage: 115VAC  
Maximum Voltage: 125 VAC  
Maximum Current: 15A  
Maximum Power: 1875 VA  
**HRO Price \$39.95**

### SX-1000



All models:

- Illuminated meters.
- Require 12 volts DC.
- Low insertion loss generally less than 0.2 dB in HF range and 0.3 dB at higher frequencies.
- Power measurement accuracy is generally  $\pm 10\%$  on the higher power ranges and  $\pm 5\%$  on the lower.
- Low loss SO-239 connectors are used except for the high frequencies as noted in the table.
- Measurements are forward power, reflected power, SWR &, on selected frequencies, PEP monitor.

## Diamond Meters

Model	Freq MHz	Power Ranges	Con- nector	HRO Price
SX-20C	3.5-30 50-54 130-150	30/ 300 W	SO-239	\$89.95
SX-40C	144-470	30/ 300 W	SO-239	\$79.95
SX-100	1.6-60	30/ 300/ 3KW	SO-239	\$129.95
SX-200	1.8-200	5/ 20/ 200 W	SO-239	\$89.95
SX-400	140-525	5/ 20/ 200 W	SO-239	\$109.95
SX-600	1.8-160 140-525	5/ 20/ 200 W	SO-239	\$169.95
SX-1000	1.8-160 430-450 800-930 1230-1300	5/ 20/ 200 W	SO-239 Type N Type N Type N	\$199.95



## HF Tuners

**MFJ-16010 Random Wire Tuner** for all bands, 1.8-30 MHz. Turn any random wire into a transmitting antenna. 200 watts. HRO Price \$59.95

**MFJ-901B Versa Tuner**, 200 watt tuner matches solid state rigs to linears within limited space and budget. 1.8-30 MHz, 4:1 balun. HRO Price \$89.95

**MFJ-903 Tuner / Wattmeter** for 6M 50-54MHz. HRO Price \$59.95

**MFJ-945E Mobile Tuner** Eliminates the need to stop, go outside to readjust your mobile whip. Cross-needle meter handles 300 watts. It reads forward / reflected power in 50 / 300 and 5 / 50 watt ranges. Has on / off lamp switch. HRO Price \$109.95

**MFJ-941E Versa Tuner II** 300-watt tuner for 1.8-30 MHz. It has a lighted cross-needle meter and on/off switch. HRO Price \$119.95

**MFJ-948** like the 949E but without dummy load. Eggshell white. HRO Price \$129.95

**MFJ-949E Deluxe Versa Tuner II** for 1.8-30 MHz and 300 watts. Built-in 50 ohm dummy load. Lighted peak reading cross-needle SWR / wattmeter for forward / reflected power in 50 / 300 and 5 / 30 watt ranges. Front panel antenna switch selects 2 coax lines directly or through tuner, random wire / balanced line or dummy load. 12-position airwound inductor. Has 4:1 balun, 1000 volt capacitors. A black aluminum front pane. HRO Price \$159.95

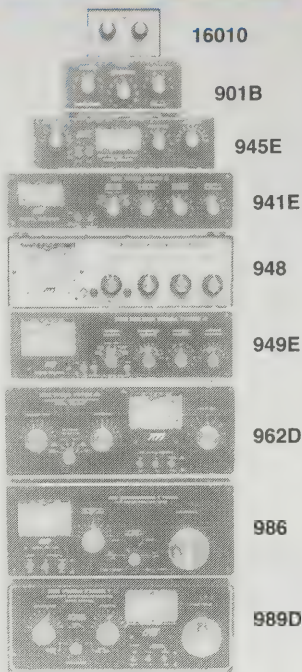
**MFJ-962D Versa Tuner III** for 1.8-30 MHz handles 1.5 kW PEP. Matches coax, random wire, or balanced line (built-in 4:1 balun). Six position antenna switch for 2 coax lines. HRO Price \$269.95

**MFJ-969 300 Watt Roller Inductor Tuner** with AirCore™ roller inductor. Covers 6m through 160m. Has lighted cross-needle meter, 8 position antenna switch, built-in dummy load, 4:1 balun. Tunes any antenna. HRO Price 189.95

**MFJ-986 Differential-T Tuner™** for 1.8-30 MHz, at 3 kW PEP. T-network with AirCore™ roller inductor and differential capacitor. Peak reading cross-needle SWR / wattmeter for 200 / 50 and 2000 / 500 watt ranges. Roller inductor spinner knob, 3 digit counter. 6 position antenna switch. 4:1 balun. HRO Price \$299.95

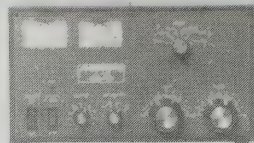
**MFJ-989D Versa Tuner V** heavy duty! Covers 1.8-30 MHz, 3 kW PEP, matches coax fed, random wires and balanced lines. AirCore™ Roller inductor, spinner knob, 3-digit counter. Peak reading cross-needle SWR / wattmeter 200 / 2000 watt ranges. 50 ohm, 300 watt dummy load, 4:1 balun, 6 position antenna switch, tilt flip stand. HRO Price \$349.95

**MFJ-9982 ContinuousCarrier™** handles 2500 W continuous carrier on all modes for 1.8-30 MHz into most unbalanced lines. 6-position antenna switch, 4-core balun, dummy load, peak/average SWR/wattmeter, 6:1 reduction drives, detailed logging scales, 3-digit counter. Uses high power, high-Q continuous current AirCore™ roller inductor made from 0.06" silver-plated solid copper strap. High current, high-capacitance 1000 pF and 500 pF air variable capacitors. HRO Price \$689.95



## HF Amps

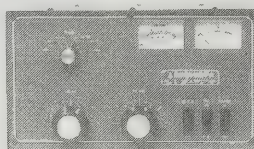
**AMERITRON**



### AL-80B \$1249.95

HRO Discount Price

Ameritron's AL-80B gets a kW PEP output from a compact desktop linear that plugs into a 120 VAC outlet. You get 850 watts output on CW and 500 watts on RTTY. It covers all bands 160-15 meters including WARC and MARS. It is user modifiable for 10/12 meters with the proper license. The amp has an extra heavy duty power supply, Eimac® 3-500Z tube, nearly 70% efficiency, tuned input, Pi/Pi-L output, inrush current protection, multi-voltage transformer, dual cross-needle meters, QSK compatibility, two-year warranty. Made in the USA.



### AL-811 AL-811H

3-tube model 4 tube model

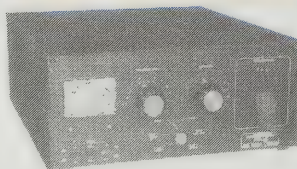
600-watt output 800-watt output

**\$669.95 \$799.95**

HRO Discount Prices

These low-cost HF amps give you plenty of power to burst thru QRM. Either compact desktop linears will slip right into your ham shack, plugging into a 120 VAC outlet. You get three (or four) tough 811A transmitting tubes plus an extra heavy duty power supply, all HF band coverage, pressurized ventilation, tuned input, dual illuminated meters, adjustable ALC, operate / stand-by switch, transmit LED, UPS shippable.

## HF Tuner



High Power Antenna Tuner ATR-30 Handles 1500 watts carrier. Super high current edge-wound silver plated roller inductor. 500 pF tuning capacitors with 6:1 vernier reduction drives. 3 core choke balun, six position antenna switch. True active Peak Reading Meter. HRO Price \$579.95

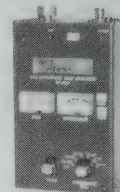
## SWR Analyzers



**MFJ-259B SWR Analyzer™** with RF Impedance Meter reads antenna SWR, complex RF impedance: Resistance (R) and Reactance (X) or Magnitude (Z) and Phase degrees, coax cable loss in dB, coax cable length and distance to fault, return loss, reflection coefficient, inductance and capacitance. Tells battery voltage. Has huge LCD digital readout with built-in frequency counter. Side-by-side SWR and RF impedance meters, Ni-Cd internal battery charger, battery saver feature, low battery warning and easy access batteries. Has smooth reduction drive tuning. Truly portable. Uses 10 AA or Ni-Cd batteries (not included) or 100 VAC with MFJ-1315 (\$14.95). HRO Price \$239.95

**MFJ-269 covers 1.8 to 170 MHz and 415 to 470 MHz** It has all the features of the MFJ-259B, the world's most popular analyzer, plus much more! Large easy-to-read two line LCD display and side-by-side meters clearly show your information. Built-in Ni-Cad/Ni-MH charger circuit, battery saver, low battery warning, smooth reduction drive tuning. Use as signal source for testing/alignment.

Built-in CoaxCalculator™ calculates coax line length in feet given coax length in electrical degrees and vice versa for any frequency and any velocity factor (great for building matching sections and phasing lines). New 12-bit A/D converter gives much better accuracy and resolution than common 8-bit A/D converters. Super easy to use! Just set the bandswitch and tune the dial. HRO Price \$339.95



## Antenna Switches

**MFJ-1702C Coax Antenna Switch.**

2 positions plus center ground, 50 ohm. Rated to 500 MHz with 02 dB loss. Handles 2.5 kW PEP or 1 kW CW. 60 dB isolation at 300 MHz. 50 dB isolation at 450 MHz. Unused terminal grounds for static protection. HRO Price \$34.95

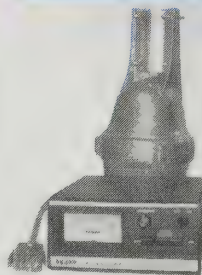


**MFJ-1704 Coax Switch** 4 positions plus center ground, 50 ohm. Rated to 500 MHz with 0.2 dB loss. Handles 2.5 kW PEP, 1 kW CW, 50 dB isolation at 500 MHz. Includes a replaceable lightning protection device that reduces lightning surges and static. HRO Price \$69.95

**MFJ-1701 Antenna Switch** 6 positions, 50-75 ohm. Handles 2 kW PEP or 1 kW CW. 1.8-30 MHz. SO-239 connectors. Unused positions grounded. HRO Price \$69.95

**MFJ-1700C Antenna / Transceiver Switch** 1-6 antennas, 1-6 rigs. Tuner, SWR meter, linear etc. in line to operate any combination. 50-75 ohms. Handles 2 kW PEP or 1 kW CW. 1.8-30 MHz. SO-239 connectors. Unused positions grounded. HRO Price \$99.95

## Hy-Gain Rotators



**Hy-Gain HAM-IV** The most popular rotator in the world. Designed for medium communications arrays of up to 15 square feet. New low temperature grease permits normal operation down to -30 degrees F. New alloy ring gear gives extra strength up to 100,000 PSI. New indicator potentiometer, new ferrite beads to reduce RF susceptibility, new cinch plug connector plus 8-pin plug at the control box. Dual 98 ball bearing race for load bearing strength and electric locking steel wedge break prevents wind introduced antenna movement. North or South center of rotation scale on meter. Low voltage control. Order HAM-IVX for 220 volts. HRO Price \$529.95

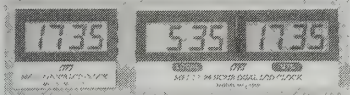


## Clocks



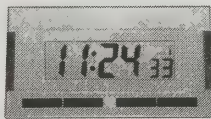
**MFJ-105C 24 Hour Quartz Wall Clock.** Handsome black. 10" diameter face, sweep second hand. Uses single "A" battery (not included). **HRO Price \$24.95**

**MFJ-113 MFJ 24/12 Hour Desk Clock** with bright red LED's. easiest to see in any room! Giant 1.8 inch LEDs with switchable 24/12 hour display, 9 minute ID timer, alarm, 9 volt batter backup and 110 VAC operation Compact size: 9Wx4Hx2.5D inches. See in the dark across the room. **HRO Price \$19.95**

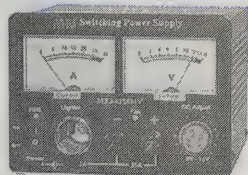


**MFJ-107B & 108B 12/24 Hour Clocks** Uses huge 5/8 inch bold LCD digits. Choose from the dual clock that has UTC and local display or the single 24 hour clock. Brushed aluminum frame. Easy set. **HRO Prices MFJ-108B \$21.95; MFJ-107B \$12.95**

**MFJ-123 Eternity Atomic Clock** This clock works for an eternity! Never needs batteries—solar powered by room light. Never needs to be set—time set by WWVB to milliseconds. Jumbo LCDs measure 2 inches tall! 24/12 switchable time format, seconds display, day-of-the-week, month, date years displays. Desk top or wall mount. **HRO Price \$69.95**



## Power Supplies



**MFJ-4225MV Mighty Lite™ Switching Power Supply.** 25 amps surge, 22 amps continuous. No RF hash! Low ripple, highly regulated. Great

review by QST Magazine! Over-voltage and over-current protection circuits. Switchable AC input voltage, works for 85 to 135 VAC or 170 to 260 VAC. Replaceable fuse. Large 3 inch meter. Tiny, only weighs 3.7 pounds. **HRO Price \$149.95**

**MFJ-4245MV** Similar to MFJ-4225MV but handles 45 amps surge and 40 amps continuous. Weighs just 5.5 pounds **HRO Price \$199.95**

## Outlets



**MFJ-1118 High Current Multiple DC Outlet.** Gives you two HF and/or VHF transceivers and six or more accessories from your transceivers's main 12 VDC power supply. **HRO Price \$79.95**

**MFJ-1116 Deluxe Multiple DC Power Outlet.** 8 outlets for powering accessories. **HRO Price \$54.95**

**MFJ-1112** like MFJ-1116 without ON / OFF switch, voltmeter and fuse. 6-pair outlets. **HRO Price \$39.95**

## Keyers & Code Tutors

**MFJ-407D Deluxe Electronic Keyer** Dot-dash memories, self-completing dots and dashes, jam-proof spacing, RF proof, instant start. Single squeeze, or straight key. Controls include speed, weight, tone and volume. ON/OFF, tune auto / semi-auto, built-in speaker, 9V battery (not included) or 110 VAC with optional MFJ-1305. **HRO Price \$69.95**



**MFJ-418 Pocket Size Morse Tutor.** Learn from zero code speed to Extra Class with customized code practice. Random, QSO mode, word recognition mode. Easy-to-use menu. Uses 9V battery. **HRO Price \$89.95**

**MFJ-461 Pocket Code Reader** Place this pocket-sized code reader near your receiver's speaker and watch Morse code signals turn into English text messages scrolling across an easy-to-read LCD display. No cables to hook-up, no computer, no interface, no other equipment needed! Use it as a backup in case you mis-copy a few characters. Practice by copying along with the MFJ-461. It'll help you learn the code and increase your speed as you instantly see if you're right or wrong. Learn Morse code anywhere, anytime.



MFJ's proven Beginner's Course takes you from zero code speed to solid copy fast! Realistic plain English QSO practice helps you pass your FCC Code exam. **HRO Price \$89.95**

**MFJ-422D Keyer/ Bencher Paddle** combo features. Iambic keying, adjustable weight and tone, front panel volume/speed controls (8-50 WPM), dot-dash memories, sidetone, speaker and automatic or semi-auto / tune modes. Use 9 V battery or 110 VAC with optional MFJ-1305 **HRO Price \$179.95**

**MFJ-422DX Keyer** only. Mount to your Bencher paddle. **HRO Price \$89.95**

**MFJ-557 Deluxe Code Practice Oscillator** has a Morse straight key on a non-skid heavy steel base with volume control, tone control, earphone jack, external speaker plug, 9 V battery (not included) or optional AC power supply. Built-in speaker, adjustable contacts. **HRO Price \$39.95**

**MFJ-434 Contest VOICE Keyer™** Microprocessor controlled keyer calls CQ, sends your call and does contest exchange in your voice! Five natural sounding messages in a total of 75 seconds. Repeat messages continually, varying the repeat from 3-500 seconds. Receive audio jack, stop button, PTT mike button, or VOX PTT line. Remote jack. **HRO Price \$179.95**

## Filters / Surge Protect

**MFJ-270 Lightning Surge Protector.** Safeguard your radio equipment from damaging static electricity and lightning induced surges. Ultra-fast gas discharge tube safely shunts up to 5000 amps of peak impulse current to an independent ground. Use up to 1000MHz. Insertion loss < 0.1 dB. Low SWR to 1:1. Does not protect against a direct lightning hit. **HRO Price \$29.95**

**MFJ-1026 Noise Filter** wipes out interference on all modes SSB, AM, CW, FM on frequencies from 1.5 to 30 MHz. Wipes out lightning crashes, severe power line noise from arcing transformers, lamp dimmers, touch control lamps, electric drills, motors, industrial processes, etc. Dig out weak stations, eliminate unwanted signals. Better than a phased antenna. Connects between transceiver and transmitting antenna. RF sense T/R switch bypasses transceiver when you transmit. Adjustable delay time. Uses 12VDC or 110 VAC with MFJ-1231B (\$12.95). **HRO Price \$169.95**

**MFJ-704 Low Pass Filter** suppresses TVI, RFI, phone and other interference. Handles full legal power with 2:1 SWR for 1.8-30 MHz. **HRO Price \$49.95**

## HF Antennas

### HF Vertical Antenna No Radials

**MFJ-1798 Halfwave Vertical.** Covers 10 bands: 75/80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 meters. No ground radials or ground needed because of the effective counterpoise that is 12 feet across. Mount it from ground level to roof top. The feed line is isolated from the antenna using MFJ's Air-Core™ balun. Achieves full-sized performance with full size radiators for 2—20 meters and high efficiency end-loading

for 30, 40 and 75/80 meters. UPS shippable. **MFJ-1796 6 Band Vertical HRO Price \$219.95**  
**MFJ-1798 10 Band Vertical.** Covers 75/80, 40, 30, 20, 17, 15, 12, 10, 6, 2 meters. **HRO Price \$279.95**

**MFJ-1750 5/8 Wave Ground Plane** 300 watt antenna for 2 meters gives you maximum possible gain of any single element antenna. Shunt fed matching network for lowest SWR over entire 2 meter and bleeds off unwanted static. Rapid-tune Radiator™, single U-bolt mounting, strong lightweight aluminum construction protected by Permanent Molecular Bonding Technology™ and 1 year No Matter What™ guarantee. **HRO Price \$29.95**

**MFJ-1752 220 MHz HRO Price \$29.95**

**MFJ-1740 1/4 Wave Ground Plane HRO Price \$24.95**



## Mobile Antennas

**MFJ-1724B Magnetic Mount Dual Band antenna** gives you quarter wave stainless steel whip for 2 meters and 440 MHz, coax and connector. Low SWR, 200 watts. **HRO Price 19.95**

**MFJ-1728B Mobile Magnetic Mount 5/8 wave 2 meter antenna.** covers 144-174MHz, low SWR, 300 watts. **HRO Price 29.95**

**MFJ-1729 Mobile Magnetic Mount super gain dual band antenna.** **HRO Price 34.95**

**MFJ-1734 Dual Band Glass Mount 144 / 440MHz** antenna gives 2.6 dB gain on 2 meters and 6.3 dB on 440 MHz. Low SWR on both bands. Free BNC adapter is included for handhelds. **HRO Price \$44.95**

**MFJ-1738 2-meter Glass Mount Antenna** handles 50 watts with 2.6 dB gain, low SWR over entire 2 meter band. **HRO Price. \$34.95**

## Dummy Loads

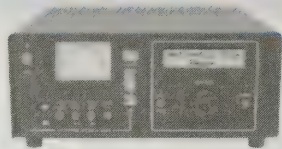
**MFJ-250 1 kW Dummy Load** 50 ohm oil-filled dummy load. Low VSWR to 400 MHz. Rated 1 kW CW or 2 kW PEP for 10 minutes. 1/2 rating for 20 minutes. 200 watt CW or 400 watt PEP continuous. Includes high quality transformer oil (no PCB). **HRO Price \$69.95**



**MFJ-260C VHF/HF Air Cooled Dry Dummy Load.** Covers 0-650MHz. 300 watts for 30 seconds. Has derating curves. SO-239 connector. **HRO Price \$39.95**

**MFJ-264 UHF / VHF / HF Dry Dummy Load** covers up to 650 MHz, usable to 750 MHz. Rated 1.5 kW for 10 seconds, 100 watts continuous. **HRO Price \$74.95**





## **AT Auto 1500** **Antenna Tuner**

On Palstar's 1500 watt auto runner, a 2-line large print display shows the status of antenna feed, frequency, and up to 32 channels of memory. The AT-Auto has a custom-built capacitor for differential tuning. What sets the AT-Auto apart from other tuners is its software-based tuning. Includes PM 2000A active peak/peak hold watt meter to measure and display forward power, reflected power, and SWR simultaneously. The backlit meter displays either peak or average power readings with 300 and 3000 watt range settings.

- 1500 Watts single tone, high efficiency, low tuner losses and wide Z range.
- 160m to 20m.
- Tuning time 1-30 seconds with high-speed processor controlled stepper motors.
- Serial port for field upgradeable software.
- Custom large plate variable capacitors at 5 kV.
- Ceramic body roller inductor (28 uH) wound with 12 ga plated solid copper wire.
- Size: 12 1/2" x 5 1/2" x 16".
- Weight: 25 lbs.

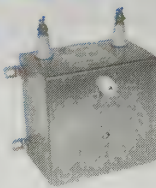
## **ZM30** **Antenna Analyzer**

The ZM30 is an automated micro-controlled SWR antenna analyzer with an 8 bit micro-controller with a precision low power DDS signal generator. It includes a self-calibrating reflectometer. The digital display shows SWR at selectable frequencies from 1 to 30 Mhz. It measures: SWR, impedance, reactance, inductors and capacitors, transmission lines, stubs, Q, and resonant frequency. There is a serial port for field upgradeable software. Battery operated.



## **B4000** **Balun**

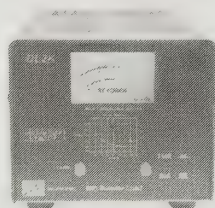
Palstar's B4000 is a 1:4 voltage balun for use with Hi-Z antenna applications and center-fed wire antennas with open wire and twin lead transmission lines. It features a die-cast aluminum case for all weather indoor/outdoor usage. Inside the aluminum case are state-of-the-art insulators with a large 3.25" Ferrite core with Teflon sleeved 12 ga. wire and rated up to 4kW plus.



## **SP30** **Shortwave** **Speaker**

The compact SP30 shortwave speaker is tonally matched to the R30 and designed to put out clear, low-distortion reproduction of the frequency range of broadcast human speech.

- 20 W peak power.
- 70 Hz to 15 kHz.
- 1/4" mono plug included.
- Size: 6" x 6" x 6" deep.
- Weight: 4 lbs.



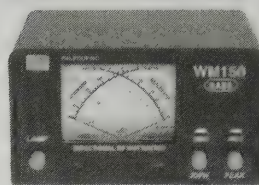
## **DL2K** **Dummy Load**

The fan-cooled DL2K is capable of handling 2000 watts for 1.5 minutes—long enough to tune your amp.

- Frequency range DC to 30 Mhz.
- Internal watt meter and analog metering.
- PL259 coax connector.
- Size: 6" x 5" x 12.5" deep.
- Weight 5 lbs.

# **ACCESSORIES**

**Designed by Hams for Hams. Made in the USA.**



## **WM150** **Watt Meter**

The WM150 measures and displays forward power, reflected power, and SWR simultaneously on its dual meter. The backlit meter can display either peak or average power readings, and has 300 and 3000 watt range settings. Accuracy of the readings is assured because the WM150 features a true shielded directional coupler.

- Range: 1.8 MHz to 60 MHz.
- PL259 coax connector.
- 115 VAC to 12 VDC adapter included.
- Size: 4.5" x 3.25" x 3.25" deep.
- Weight 1.2 lbs. / 0.55 Kg.



## **AT4K** **Antenna Tuner**

The AT4K has a power rating of 2500 watts single tone continuous.

- Unbalanced/balanced output (switch activated on front panel) with high power balun at the input of tuner circuit.
- T match circuit: impedance matching range 8 ohms to 2000 ohms.
- Custom large value (460pf) variable capacitors at 6 kV.
- 10 amp edge-wound silver plated ceramic body roller inductors crank handle driven.
- Switchable antenna inputs.
- Ferrite 1:1 input balun.
- Peak / peak hold dual cross-needle metering (1-2 sec hold) with backlighting.
- Size: 15" x 7" x 16" deep.
- Weight: 20 lbs.

## **Palstar Antenna Products**

Model	Description	Price
<b>Antenna Tuners</b>		
AT-AUTO	1500 W Antenna Tuner	\$1,295.00
AT5K	3500 W Antenna Tuner	\$1,195.00
AT4K	2500 W Antenna Tuner	\$895.00
BT1500A	1500 W Balanced Antenna Tuner	\$695.00
AT1500CV	1500 W Antenna Tuner Extended 3 Year Warranty	\$459.95 \$74.99
AT1500DT	2000 W Differential Antenna Tuner Extended 3 Year Warranty	\$479.95 \$74.99
AT1KM	1200 W Differential Antenna Tuner Extended 3 Year Warranty	\$379.00 \$74.99

<b>Wattmeters</b>		
PM2000A	2000 W Wattmeter 1.8Mhz to 60Mhz	\$149.95
WM150	1500 W Wattmeter 1.8Mhz to 60Mhz	\$119.95
WM150M	1500 W Wattmeter 1.8Mhz to 60Mhz	\$119.95

<b>Antenna Analyzer</b>		
ZM30	Antenna Analyzer SWR 1Mhz - 30 Mhz	\$399.00
ZM60	Antenna Analyzer SWR 1Mhz - 60 Mhz	\$389.00

<b>Shortwave Accessories</b>		
R30C	Shortwave Receiver AM/SSB Collins Filter-SSB Only	\$595.00
R30CC	Shortwave Receiver AM/SSB Collins Filters	\$675.00
SP30	Speaker 12 Watts (for R30C/CC)	\$59.95
MW550P	Medium Wave Active Preselector	\$275.00
AA30	Shortwave Active Antenna Matcher .3 - 30Mhz	\$99.95

<b>Dummy Loads</b>		
DL1500	Dummy Load 1500 W - 450 Mhz	\$99.95
DL2K	Dummy Load 2000 W - 30 Mhz meter/fan	\$199.95
DL5K	Dummy Load 5000 W - 30 Mhz meter/dual fan	\$399.00

<b>Baluns</b>		
B4000	Balun 4/1 4000W-Voltage-Hi-Z	\$89.95
B4000C	Balun 1/1 4000W-Current-Low-Z	\$89.95

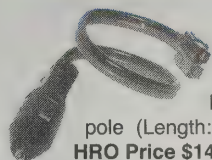


# POWER CABLE ACCESSORIES



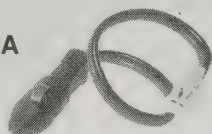
## Adapter Cables

### Cig-2-PP-5-15A



Cigarette Lighter Plug Fused (AGC) to Powerpole (Length: 5 ft., Amps: 15 amps). **HRO Price \$14.95**

### Cig-2-OEM-5-15A



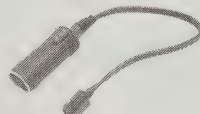
Cigarette Lighter Plug Fused (AGC) to OEM-T Male Connector (Length: 5 ft., Amps: 15 amps). **HRO Price \$14.95**

### PP-2-OEM-5



Powerpole to OEM "T" Male Connector (Length: 5 ft.) **HRO Price \$14.95**

### SOC-PP-1-15A



Cigarette Lighter Socket with Internal ATC Fuse and Powerpole End (Length: 1 ft., Amps: 15 amps). **HRO Price \$14.95**

### PP-45-2-Ring-10G



6 ft. 10 gauge Power Supply Cable with 45 amp Powerpoles and 1/4 inch gold plated ring terminals on the other. **HRO Price \$13.95**

### PP-75-2-Ring-8G



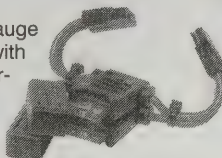
10 foot of 8 gauge Power Supply Cable with 75 amp Powerpole connectors on one end and 1/4 inch gold plated ring terminals on the other. **HRO Price \$18.95**

## Red / Black Wire

Model	Description	HRO Price per Foot
RB-08	Red/Black 8 gauge wire	\$1.56
RB-10	Red/Black 10 gauge wire	\$0.95
RB-12	Red/Black 12 gauge wire	\$0.62
		HRO Price per Roll
RB-14-25	25 ft Roll 14 Gauge	\$14.95
RB-18-25	25 ft Roll 18 Gauge	\$6.95
RB-22-25	25 ft Roll 22 Gauge	\$6.95

## Fused Adapter Cables

### PP-HOLD-ATC-12-15A



ATC Style 12 gauge fuse holder with 30 amp Powerpoles mounted on each end. Includes (2) 15 amp ATC fuses. **HRO Price \$12.95**

### PP-HOLD-ATC-10-40A

ATC Style 10 gauge fuses holder with 45 amp Powerpoles mounted on each end. Includes (2) 40 amp ATC fuses. **HRO Price \$14.95**

### PP-HOLD-MAXI-8-80A



ATC Style 8 gauge MAXI fuse holder with 75 amp Powerpoles mounted on each end. Includes (2) 80 amp MAXI fuses. **HRO Price \$24.95**

### Ring-HOLD-ATC-12-15A

ATC Style 12 gauge fuses holder with 30 amp Powerpoles mounted on one end and gold plated 1/4" ring terminals on the other. Includes (2) 15 amp ATC fuses. **HRO Price \$12.95**

### Ring-HOLD-ATC-10-40A



ATC Style 10 gauge fuses holder with 45 amp Powerpoles mounted on one end and gold plated 1/4" ring terminals on the other. Includes (2) 40 amp ATC fuses. **HRO Price \$14.95**

### Ring-HOLD-MAXI-8-80A



ATC Style 8 gauge MAXI fuses holder with 75 amp Powerpoles mounted on one end. Includes (2) 80 amp MAXI fuses, and gold plated 1/4" ring terminals on the other. Includes (2) 80 amp ATC fuses. **HRO Price \$24.95**

## Meter



### Watt-BLK-PP

Watt's Up meter with Powerpole ends by RC Electronics. **HRO Price \$58.95**

## Powerpole Splitters

### Red-Dee-2 Connect

#### PS-4

Red-Dee-2™ Connect Powerpole Splitter **HRO Price \$14.95**



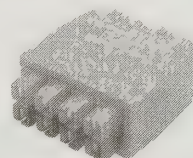
#### PS-4 Plus

Red-Dee-2™ Connect Powerpole Splitter. **HRO Price \$14.95**



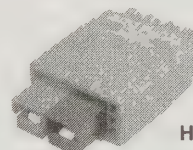
#### PS-8

Red-Dee-2™ Connect Powerpole Splitter. **HRO Price \$24.95**



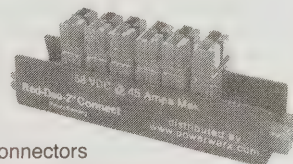
#### PS-75 / 45-4

Red-Dee-2™ Connect Powerpole Splitter. **HRO Price \$34.95**

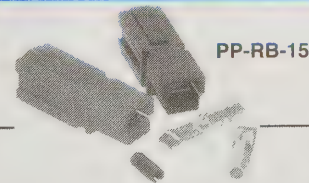


#### PS-6AA

Red-Dee-2™ Powerpole Splitter with Powerpole connectors on both ends **HRO Price \$31.95**



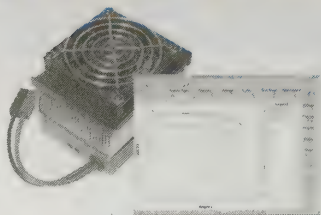
## Powerpole Bags



### PP-RB-15

Model	Description	HRO Price Per Bag
PP-RB-15-10	Powerpole 15A 10 pack	\$9.95
PP-RB-15-25	Powerpole 15A 25 pack	\$19.95
PP-RB-30-10	Powerpole 30A 10 pack	\$9.95
PP-RB-30-25	Powerpole 30A 25 pack	\$19.95
PP-RB-45-10	Powerpole 45A 10 pack	\$14.95
PP-RB-45-25	Powerpole 45A 25 pack	\$29.95





## Computerized Battery Analyzer

**HRO Price \$109.95**

**CBA II:** Test any battery type, size, chemistry, up to 48 volts. Micro-processor controlled tester plugs into PC's USB port. Plots constant current discharge voltage vs. ampere-hours to show battery capacity. Extremely accurate. Tests a few mA to 40 amperes, limited to 120 watts, safely. User friendly software, easy to install, set up, run. Save and print graphs. Print date and performance labels for your batteries. Ideal for anyone relying on rechargeable battery power. 6 ft USB cable, CD, PowerPole connectors.

**Temperature Probe:** Measures battery temperature during high current CBA test. Magnetic. Turns off test if over temperature. **HRO Price \$13.95**



## RIGtalk

## USB Rig Control Interface

CI-V Icom, Ten Tec, and Yaesu TTL CAT mini or standard DIN jack. Windows Plug and Play serial to TTL level converter. CD ROM with Plug and Play preinstall, third party rig control software collection and operator's manual. Order packaged with pre-wired radio cable below.

**HRO Price**

**RT1/CIV RIGtalk \$56.95**

with cable for Icom & Ten-Tec

**RT1/CAT RIBtalk \$61.95**

with cable for Yaesu FT-100, 100D, 817, 857, 897

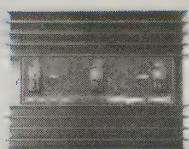
**RT1/CAT6 RIGtalk \$61.95**

with cable for Yaesu FT-736, 747, 767, 980, 990, 1000, 1000D



## PWRcrimp

The PWRcrimp tool is a high performance tool for crimping 15, 30 and 45 A Anderson Powerpole contacts. Ratcheted with contact positioner. Better than soldering. Easy to use. **HRO Price \$49.95**

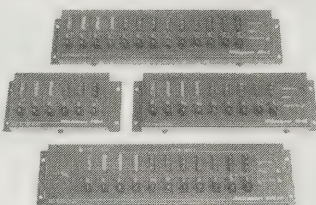


## PWRgates

PWRgates provide backup power for the ham shack, repeater, or emergency communications center. Equipment is instantly switched between 13.8V DC supply and battery during a power failure. Keeps battery charged. Handles up to 40A.

**PG-40S - SuperPWRgate** has a built-in four stage battery charger. Selectable 1, 4, 6 and 10A rate. **HRO Price \$129.95.**

**PG-40 - Powergate** has a simple float charger. **HRO Price \$69.95**



## RIGrunners

RIGrunners power panels are the most convenient and safe way to connect all your 12 volt equipment. Uses Anderson Powerpoles, the ARES, RACES, RSGB standard, polarized and color keyed. All models rated at 40 amps. Each outlet is fused with assorted ATC/ATO automotive fuses. Blown fuse LED indicators. For home and mobile use. Includes a 6' cable, 5 spare fuses.

**RR / 4010S / C:** 10 outlets. One "always on" and nine auto or manually switched outlets. FET on/off system controls switched outlet so you can turn on the entire station with the power button on your rig. Quick status precision LED, high, normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price \$129.95**

**RR / 4012 / C:** 12 outlets. Quick status precision LED, high, normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price \$129.95**

**RR / 4008 / C:** 8 outlets. Quick status precision LED, high, normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price \$109.95**

**RR / 4005 / C:** 5 outlets. Perfect for small or mobile installs, or as expansion unit. 6 pair Powerpole sets. **HRO Price \$79.95**

## RIGblasters



ARIGblaster is the easiest way to connect your radio to your computer to operate PSK31, SSTV, RTTY, Echolink, AMTOR, Packet, APRS, CW, DVK, WSJT, logging and more. RIGblasters connect to a radio's microphone input, computer's sound card output, and USB. Ground isolated, rf filtered. Supplied with all cables, AC-power cubes (not Nomic), CD ROM (over 100 programs), instructions. All work with 8-pin and RJ-45 microphones. 4-pin and RJ-11 style microphone conversion kits are available.

**RB/PR/CUSB - RIGblaster Pro / USB:** Does everything you can do with a computer and a radio: all sound card modes, microphone equalization, records QSO's. rig control, direct CW and FSK. Automatic microphone switching. A must for the serious contester / logger. **HRO Price \$279.95**

**RB / PL / CUSB - RIGblaster Plus / USB:** All sound card modes, direct CW, FSK, USB or serial control, automatic microphone switching. Easy to hook up. **HRO Price \$149.95**



**RB / NO / CUSB - RIGblaster Nomic / USB:** All sound card modes. No microphone switching. No power needed. Great for Ecolink, portable or temporary setups. **HRO Price \$89.95**

**Yaesu MOD6 CBL:** 6-pin microphone conversion cable. **HRO Price \$16.95**

**4T8 / Kit:** 4-pin microphone conversion cable kit. **HRO Price \$23.95**

## RIGblaster P&P Plug and Play USB, Data Jack sound card interface

Other RIGblasters work with more than 2000 different radios through the microphone jack. If your radio has a data jack that allows operation on all bands and modes while supporting proper microphone operation, the RIGblaster P&P may be your best choice.

Simple USB "Plug and Play" installation: one plug to the radio, USB and sound for the computer. Built-in USB to serial converter for PTT, CW and CAT or CI-V rig control. Unlike other USB sound card interfaces, this RIGblaster is compatible with more than 100 amateur radio sound card programs and more than 25 modes.

**FEATURES:** USB powered, no external power supply. Compact, great for portable or QRP operation. Built in TTL CAT or CI-V rig control. CW keying. Isolated audio and keying unlike other USB interfaces. LED indicators for USB, PTT keying and CW keying status.

**SUPPLIED WITH:** Radio specific 8' data jack cable. 12" computer audio and USB cables. CD-ROM with USB Plug and Play installation, owner's manual, ham radio sound card software collection.

## Plug and Play RIGblasters

Model Number	Description	HRO Price
RB/PP/I8D	Icom 8 pin DIN ACC1	\$109.95
RB/PP/I13D	Icom 13 pin DIN	\$109.95
RB/PP/IYK6MD	Yaesu, Icom, Kenwood mini 6 pin DIN	\$99.95
RB/PP/K13D	Kenwood ACC2 13 pin DIN	\$109.95

## Accessory Cables

Model Number	Description	HRO Price
PP/CW/CBL	CW cable 1/8" mini phone with 1/8-1/4" adaptor	\$8.95
CIV/CBL	Icom CI-V cable 1/8" mini stereo to 1/8" mono	\$8.95
CATMINI/CBL	Yaesu CAT 8 pin mini DIN cable	\$12.95
CAT/6D/CBL	Yaesu CAT 6 pin DIN cable	\$12.95



# COMPUTER CONNECTIONS

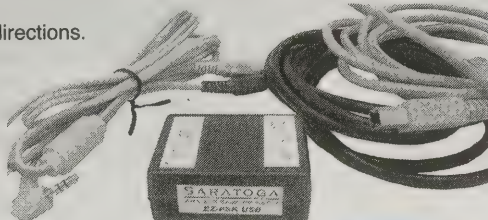
## SARATOGA AMATEUR RADIO PRODUCTS

### Easy Connectors

HRO Price \$45.95

Saratoga's connectors offer true plug and operate installation. No hassle setting jumpers. Simply plug in the EZ-PSK between your rig and PC sound card to start operating with your favorite PSK-31 or other digital mode software.

- Audio isolated in both directions.
- No external power.
- One-year warranty.
- Made in U.S.A.
- Weighs less than 7 ounces.
- Includes HamScope & Digipan.
- Works with all digital mode software.



**EZ-PSK**

#### Interface Model

EZ-PSK-703/3  
EZ-PSK-817  
EX-PSK-I8PIN  
EX-PSK-K8PIN  
EX-PSK-KM  
EX-PSK-Y8PIN

#### For Rigs

IC-706 / IC-703  
FT-817 / FT-857 / FT-897  
Icom 8-pin round connectors  
Kenwood 8-pin round connect  
Kenwood modular connectors  
Yaesu 8-pin round connectors

### Power Panels

Power Panels provide convenient, safe, and reliable power distribution for all the radios and accessories in your shack or mobile installation. Easily move rigs between operating positions without worrying about the power cords.

- Anderson PowerPole connectors.
- ARES / RACES standard connection.
- Mini ATC automotive fuses.
- Surge suppression & reverse polarity protection.
- One-year warranty.
- Made in the U.S.A.



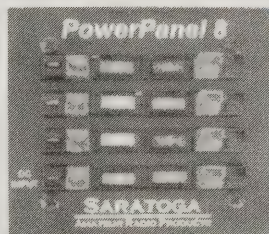
**PowerPanel 4**  
HRO Price \$24.95

#### PowerPanel 4

- 4 port DC power distribution panel.
- 1 input & 3 outputs.
- 25 Amp rating.



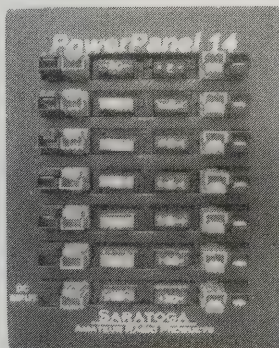
**PowerPanel 6**  
HRO Price \$34.95



**PowerPanel 8**  
HRO Price \$59.95

#### PowerPanel 8

- 8 port DC power distribution panel.
- 30 Amp rating.



**PowerPanel 14**  
HRO Price \$79.95

#### PowerPanel 14

- 14 Port DC power distribution panel.
- 30 Amp rating.

## Timewave Technology



### HamLinkUSB™ USB Rig Controller Plus

*Connect and control transceiver via USB  
with Plus option for T-R switch,  
key, footswitch input or user I/O*



The HamLinkUSB™ Rig Controller Plus is a USB to logic level conversion device for CAT / CI-V enabled transceivers that provides PTT output, keying output, or foot switch input options.

The CAT / CI-V feature provides a logic level serial interface which connects directly with non-RS-232 CAT / CI-V inputs on Kenwood, Icom, Yaesu, Ten-Tec, Elecraft and Alinco models.

The controller is compatible with most soundcard and software control programs such as PK-Term 3.0. **HRO Price \$59.95**

### HamLinkUSB Optional Cable Assemblies

Model	Weight (lbs.)	HRO Price
HLUSB-CIV	CI-V - Icom, Ten-Tec, Elecraft	\$8.95
HLUSB-CAT	MiniDIN-8 cable assembly for Yaesu FT-857/817/100/100DHLUSB-4CON	\$13.95
	4 conductor with 3.5 mm plug to open end cable	\$13.95

### Control Software



## RT Systems

Windows based software that addresses memory channel details and global settings of a specific radio through easy to use spread sheet entry, check boxes and listed selections. Kit includes RT Systems software on mini-CD. Serial cable and – where needed – adapter specific to the radio. For Windows 2000 and XP. Free serial port, USB compatible with proper serial adapter and local CD required.

Model	Radio Models	Includes	HRO Price
WSC-T90	IC-T90	Software/Serial Cables	\$49.95
WSC-2720	IC-2720	Software/Serial Cables	\$49.95
WSC-208	IC-208	Software/Serial Cables	\$49.95
WSC-V8000	IC-V8000	Software/Serial Cables	\$49.95
WSC-Q7A	IC-Q7	Software/Serial Cables	\$49.95
WSC-T91	IC-T91	Software/Serial Cables*	\$49.95
WSC-2200	IC-2200	Software/Serial Cables	\$49.95
WSC-P7	IC-P7	Software/Serial Cables	\$49.95

\* Programming software rather than software for control of the digital functions

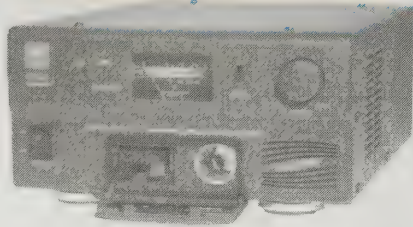
#### All RT Systems Programmer Cables (RTS-03).

USB to Serial adapter (true RS-232. Works with all programmers)  
**HRO Price \$14.95**



# POWER SUPPLIES

**DIAMOND**

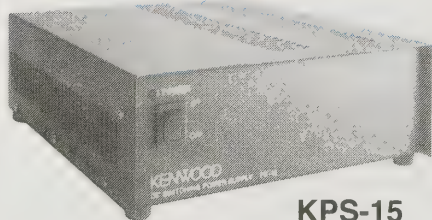


## Switching Mode DC Power Supply GZV4000

The GZV4000 switching mode DC power supply has a 40 amp continuous rating at 100% duty cycle. The supply has variable voltage from 5-15 VDC using a voltage control knob with a center detent at 13.5 VDC. There is overload and short circuit protection with current feedback at approximately 42 amps and temperature protection with a variable speed fan. An AC line filter provides EMI protection. The meter selector allows monitoring of voltage and current. Power and overload indicators are included. Connect your rig easily with front panel DC terminals and a cigarette lighter jack. The unit has an internal 8 ohm speaker. Operates on 120 VAC  $\pm$  20%, 50-60 cps. Ripple and noise is less than 8mV rms.

**HRO Price: \$199.95**

**KENWOOD**



## KPS-15

The KPS-15 is a compact, switching power supply for high current applications. It is rated at 23 amps and is similar in size to the TS-50. The supply is for 110-230 VAC. Weighs only 4.5 pounds.

**Suggested List Price \$229.95**

## PS-52

Kenwood's largest is designed to use with the TS-850, operating all modes for the rated periods of time. Provides 13.8 VDC at 22.5 A. Has a cooling fan and protection circuits. Can be used with all Kenwood 12 VDC radios.

**HRO Price 279.95**

## PS-53

Designed for the TS-570 D/S(G) operating all modes for the rated periods of time. Provides 13.8 VDC at 20.5 A. Has a cooling fan and protection circuits.

**HRO Price \$269.95**

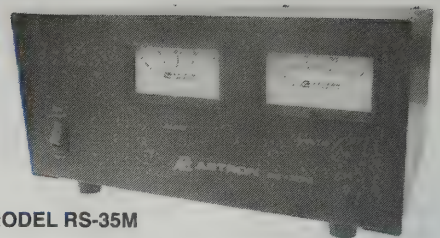
**ASTRON CORPORATION**

All of Astron's solid-state electronically regulated Power Supplies have fold-back current limiting to protect from excessive current and a heavy duty heat sink. Output voltage: 13.8 VDC  $\pm$  0.05 volts. 220 V supplies available on special order at slightly higher price.

**RS-A Series** Standard power supply with on / off switch. Voltage may be adjusted internally.

**SL Series** Slim Line design for low-profile looks.

## MODEL RS-35M



**RS-M Series** Power supply with front meters. One is for voltage and the other current.

**SS Series** High efficiency switching supplies specially filtered for use with communications equipment for all frequencies including HF. Heavy duty design, low profile, light weight and EMI filter.

**VS-M Series** Variable power supplies with separate volt and amp meters. Adjustable output: 2-15 volts.

**RM Series** 19" x 5 1/4" rack-mount power supplies available with or without meters and may be variable. The new RM-60 comes with or without meters.

## Power Supplies

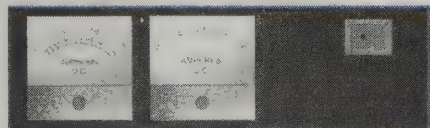
Brand	Model	Cont.Duty 13.8 VDC	Intermit Duty	Height in	Width in	Depth in	Weight lbs	HRO Price
Alinco	DM-330MVT	30 A	32A	2.75	7	7	5	\$179.95
Astron	RS-4A	3 A	4 A	3.75	6.5	9	5	\$39.95
	RS-7A	5 A	7 A	3.75	6.5	9	9	\$59.95
	RS-10A	7.5 A	10 A	4	7.5	10.75	11	\$69.95
	RS-12A	9 A	12 A	4.5	8	9	13	\$79.95
	RS-20A	16 A	20 A	5	9	10.5	18	\$96.95
	RS-35A	25 A	35 A	5	11	11	27	\$149.95
	RS-50A	37 A	50 A	6	13.75	11	46	\$219.95
	RS-70A	57 A	70 A	6	13.75	13.75	48	\$299.95
	RS-12M	9 A	12 A	4.5	8	9	13	\$89.95
	RS-20M	16 A	20 A	5	9	10.5	18	\$116.95
	RS-35M	25 A	35 A	5	11	11	27	\$169.95
	RS-50M	37 A	50 A	6	13.75	11	46	\$239.95
	RS-70M	57 A	70 A	6	13.75	12.12	48	\$329.95
	RM-50A	37 A	50 A	5.25	19	12.5	50	\$299.95
	RM-60A	50 A	55 A	7	19	12.5	63	\$349.95
	RM-35M	25 A	35 A	5.25	19	12.5	38	\$259.95
	RM-50M	37 A	50 A	5.25	19	12.5	50	\$329.95
	RM-60M	50 A	55 A	7	19	12.5	63	\$389.95
	VS-20M	16 A	20 A	5	9	10.5	20	\$139.95
	VS-35M	25 A	35 A	5	11	11	29	\$199.95
	VS-50M	37 A	50 A	6	13.75	11	46	\$259.95
Diamond	SL-11A	7 A	11 A	2.75	7.62	9.95	11	\$79.95
	SL-15R	12 A	15 A	2.75	7.62	9.95	14	\$109.95
	SS-10	7 A	10 A	1.125	6	9	3.2	\$80.95
	SS-12	10 A	12 A	1.375	6	9	3.4	\$89.95
	SS-18	15 A	18 A	1.375	6	9	3.6	\$99.95
	SS-25	20 A	25 A	2.875	7	9.375	4.2	\$119.95
	SS-30	25 A	30 A	3.75	7	9.625	5	\$129.95
	GZV4000	40 A	42 A	4.5	8.25	13	8	\$179.99
	SS-330W	30 A	33 A	4	5	11	4.8	\$169.95
	SS-505	50 A	55 A	4.3	8.5	11	8.25	\$399.95
Icom	PS-85	15 A	20 A					\$269.95
	PS-125	25 A	25 A	3.7	4.4	11.3	6.6	\$349.95
Kenwood	KPS-15	20 A	23 A	2.38	7.1	8.88	4.5	\$199.95
	PS-52	22.5 A	22.5 A	4.25	7	12.25	16	\$279.95
Samlex	PS-53	22.5 A	22.5 A	6.81	3.78	11.66	15.2	\$269.95
	SEC1212	10 A	12A	2.2	7	8.25	3	\$79.95
	SEC1223	23 A	24 A	2.2	7	8.25	4	\$99.95
	SEC1235	30 A	35 A	2.1	10.4	7.1	5	\$129.95
Yaesu	SEC1235M	30 A	35 A	2.1	10.4	7.1	5	\$139.95
	FP-1023	23 A		2.25	6	8.25	4.2	\$149.95
	FP-1030A	25 A	30 A					\$239.95

\* Internal Supply

(220 volt versions of some models available at additional cost by special order. Contact HRO for details.)



## Switching Supplies



**SEC-1235 - \$129.95**  
**SEC-1235M - \$139.95**

**NEW!**

The SEC1235 is a 30 amp continuous duty, 35 amp intermittent switching power supply. It is available in two models. The SEC-1235M has a volt / ammeter while the SEC-1235 has no meters. The supplies feature a temperature controlled fan, overload short circuit protection, over temperature protection and over voltage protection. The supplies weigh just 5 pounds. Dimensions are 10.4" L X 7.1" W X 2.1" H.

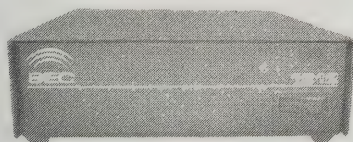
## For Base Stations

### Switching Mode Power Supplies



**SEC-1223**

Designed specifically for use as a land mobile base station power supply, the SEC-1223 uses Mosfet based switch mode technology for high reliability, high efficiency and minimum size and weight. The design reduces output ripple to levels previously available only from bulky, less efficient linear power supplies. It delivers high power with low RFI when used with HF, VHF, and UHF radios. Current limiting and safe operating area circuitry protects devices powered by the SEC-1223 from excess voltage. The supply operates from 100-130 or 200-260 volts and produces 23 Amps continuously, 24 Amps at 50% duty cycle for 5 minutes. UL and cUL approved. Complies with FCC Class B Part 15. 3 year manufacturer's warranty. **HRO Price \$99.95**



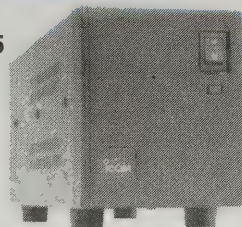
**SEC-1212**

Same cabinet size as the SEC-1223, this model provides 10 Amps continuous output power, 12 Amps 50% duty cycle and is highly filtered to provide clean power to HF, VHF, and UHF radios. It is UL and cUL listed. 3 year manufacturer's warranty. **HRO Price \$79.95**

## Rig-Matching Power Supplies

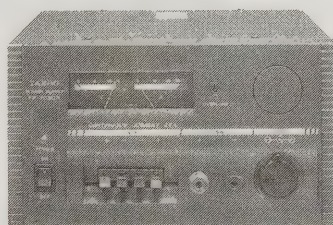
**ICOM**

**PS-125**



This is the matching supply for the IC-756PRO. It will work with all Icom HF radios. 25A continuous switching supply. **HRO Price \$299.95**

**YAESU**



**FP-1030A**

Yaesu has power supplies primarily designed for use with their HF rigs. These include the FP-712, FP-1023 and the FP-1030A and are low profile switching supplies.

### 24 Hour FAX Order Numbers

Anaheim	714-533-9485
Atlanta	770-263-9548
Denver	303-745-7394
New Castle	302-322-8808
Oakland	510-534-0729
Phoenix	602-395-1244
Portland	503-684-0469
Salem	603-898-1041
San Diego	858-560-1705
Sunnyvale	408-736-9499
Burbank	818-842-5283
Woodbridge	703-494-3679

## Switching Supplies



Daiwa switching power supplies are one-third the weight and one-half the size of conventional power supplies. Daiwa models can be used for DC motors that require peak starting currents and will accept input voltage from 90-130V. Switching supplies can create pulse noise, but Daiwa engineers have isolated any noise and moved it out of the amateur bands creating a super quiet power supply.

### SS-330W: 30 amp

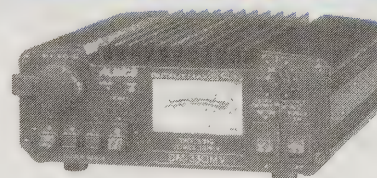
- 30 amps continuous voltage (33 amps peak).
  - Voltage adjustable: 5-15V.
  - Dual meters, amp and voltage.
  - Automatic cooling fan built in.
  - Weight: ONLY 4 lbs 14 ozs.
  - Dimensions: 5" x 4" x 11" (approx).
  - Ripple voltage: less than 10 mV.
  - Short circuit protected.
  - Carry handle for portability.
- HRO Price \$169.95**

### SS-505: 50 amp

- 50 amps continuous voltage (55 amps peak).
- 50 amps available at all output voltages.
- Voltage adjustable: 5-15V.
- Binding posts on back, cigarette-lighter socket and spring loaded connectors on front.
- Voltage fluctuation: less than 1.5%.
- Dual purpose meter - amp and voltage.
- Automatic cooling fan built in.
- Weight: ONLY 8 lbs 4 ozs.
- Dimensions: 8.5" x 4.3" x 11" (approx).
- Ripple voltage: less than 5 mV.
- Short circuit protected.
- Carry handle for portability.
- Perfect for industrial, laboratory, or ham use.

**HRO Price \$399.95**

**ALINCO**



**DM-330MVT**  
**Switching Power Supply**

Super compact, lightweight power supply is great for portable operations. Provides 32 amps peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit moves pulse noise. Short circuit protection. Convenient front panel connections. Cigarette plug socket. **HRO Price \$149.95**



# MAHA

# BATTERY PACKS / CHARGERS

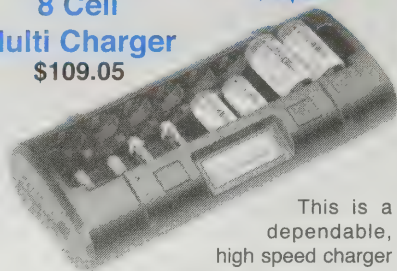
**MH-C808M**

**8 Cell**

**Multi Charger**

**\$109.05**

**NEW!**



This is a dependable, high speed charger that can charge AA, AAA, C and D cells. There are 8 independent charging circuits to charge 1 to 8 batteries. Mix rechargeable AA / AAA / C / D Ni-CD and Ni-MH batteries. Backlit display shows charging and conditioning status. Selectable soft and rapid charge modes. Built-in deep battery conditioning system.

**MH-K5000**

**Worldwide Travel Charger**

**\$39.95**



One hour worldwide travel charger and conditioner with an integrated 100-240V power supply. Includes four high capacity 2500Mah AA batteries with an extra 8-cell battery holder.

**MH-C801D**

**8-Cell One Hour Charger**

**\$84.95**



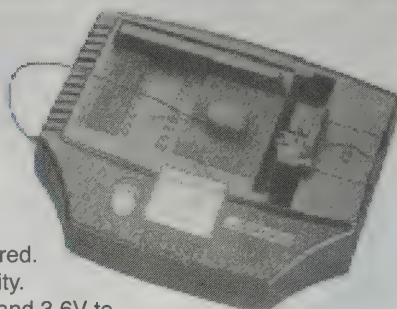
- Eight independent charging circuits. Charge 1 to 8 batteries. Mix rechargeable AA / AAA batteries.
- LCD display shows charging and conditioning status in English.
- Precision microprocessor controlled 0.001 V voltage detection. No under-charge. No over-charge.
- Selectable soft and rapid charge modes soft charge option for highest battery life. Rapid charge option for shortest charge time.
- Built-in deep battery conditioning system.

**MH-C777 Plus II**

**Universal Charger / Analyzer**

**\$79.95**

- Charge and analyze nearly any battery pack for ham radio and cellular.
- Intelligent microprocessor.
- Reset switch for easy operation.
- Supports AA, AAA, C, D in NiMH, NiCD or Lithium Ion. Optional battery holders required.
- Digitally displays voltage, time, and capacity.
- Supports 1.2V to 14.4V for NiMH & NiCD and 3.6V to 14.4V for Lithium Ion.



## NiMH Ham Radio Battery Packs

Model	Volts (Vdc)	Capacity (Mah)	Compatible Handheld	HRO Price
MH-CNB-152	12	1000	ADI AT-201, 401 C-158, 228, 528	\$59.95
MH-CNB-153	7.2	1300		\$49.95
MH-FNB-12	12	1000	Yaesu FT-470, 411, 811, 23R, 33R	\$59.95
MH-FNB-17	7.2	1000		\$49.95
MH-FNB-27	12	1000	Yaesu FT-530, 76, 415, 815, 729	\$59.95
MH-FNB-31	4.8	650		\$49.95
MH-FNB-38	9.6	650	Yaesu FT-51R, 41, 11	\$59.95
MH-FNB-40H	7.2	1000		\$59.95
MH-FNB-41	9.6	1800	Yaesu FT-50R, 40, 10	\$55.95
MH-FNB-V47	7.2	1800		\$69.95
MH-FNB-V57	7.2	1500	Vertex VX-400, VX-210	\$49.95
MH-FNB-58LI	7.4	1200	Yaesu VX-5R, VX-7R	\$59.95
MH-FNB-72	9.6	1700	Yaesu FT-817	\$59.95
MH-BP-7	13.2	1000	Icom 2GA, 2AT, 4GAT, 12GAT	\$69.95
MH-BP-8	8.4	1200	Icom 2GA, 2AT, 4GAT, 12GAT	\$59.95
MH-BP-8H	8.4	1800		\$69.95
MH-BP-83	7.2	1300	Radioshack HTX-202, 404	\$49.95
MH-BP-132G	12	1300	Icom W2A, 4SA, 2-3-24SAT	\$59.95
MH-BP-132B	12	1300	Icom W21, 2GXAT, V21AT Gray	\$59.95
MH-BP-173	9.6	650	Icom W21, 2GXAT, V21AT Black	\$69.95
MH-BP-180	7.2	1000		\$49.95
MH-BP-196M	9.6	1350	Icom W31, W32, T7A, T22, T44, Z1A	\$49.95
MH-BP-199	6	700	Icom T2A, T2H	\$55.95
MH-BP-200	9.6	680	Icom T8A, T81	\$59.95
MH-PB-8	12	1300		\$62.95
MH-PB-17	12	1300	Kenwood TH77, 450T, 55AT, 26, 75	\$69.95
MH-PB-18	7.2	1300		\$49.95
MH-PB-32	6	1000	Kenwood TH-27, 247, 28, 48	\$47.95
MH-PB-34	9.6	1000		\$57.95
MH-PB-39	9.6	1050	Kenwood TH-22, 42, 79AD	\$59.95
MH-PB-39H	6	1800		\$59.95
MH-PB-42LI	7.4	1800	Kenwood TH-G71A, D7	\$69.95
			Kenwood THF6A	\$69.95

## NiMH Rechargeable Battery Cells

Model	Volts (Vdc)	Capacity (Mah)	Description	HRO Price
MH-4AA270	1.24	2700	4 pack "AA" size NiMH Cells	\$12.95
MH-AAA1000	1.24	1000	2 pack "AAA" size NiMH Cells	\$5.99
MH-2C500	1.24	3800	2 pack "C" size NiMH Cells, 5000 mAh	\$23.95
MH-2D110	1.24	7500	2 pack "D" size NiMH Cells, 11000 mAh	\$33.95



# SOLAR POWER SYSTEMS

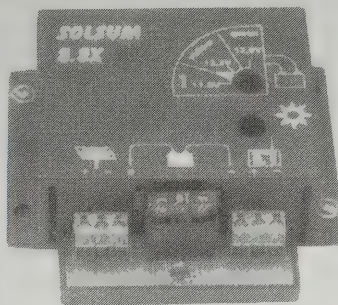
# TOOLS



## Steca Controllers

The SunWize-Steca Solsum controller is an economical pulse-width modulated shunt controller. A tricolor LED indicates three ranges of battery voltage and a green LED indicates current array. The Solsum controller features overcharge and over discharge protection, temperature compensated charging, MOSFET transistors and fuse protection. These controllers ensure maintenance-free operation and long product life. Available with or without a low-voltage disconnect.

The SunWize-Steca Gamma, Sigma and Omega controllers use an advanced control algorithm that sets new standards for solar charge technology. The self-learning controller automatically adjusts for the capacity and age of the battery. Patented hybrid regulator design combines both series and shunt technology for nominal power consumption. These controllers provide standard protection features as well as a tricolor information LED and tricolor state-of-charge LED. Available with or without an LCD.

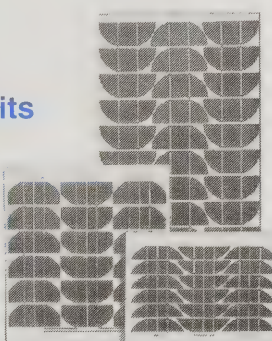


Model	Voltage	Rated PV Current	Rated Load	Size (inches)	Weight (lbs)	HRO Price
Solsum 5.0X	12/24 VDC	5A	5A	3.4 x 3.85 x 1.37	0.22	\$39.95
Gamma	12/24 VDC	12 A	12 A	7.4 x 4 x 1.93	1	\$99.95
Sigma	12/24 VDC	20 A	20 A	7.4 x 4 x 1.93	1	\$119.95
Omega	12/24 VDC	30 A	30 A	7.4 x 4 x 1.93	1	150.95



## OEM Solar Module Kits

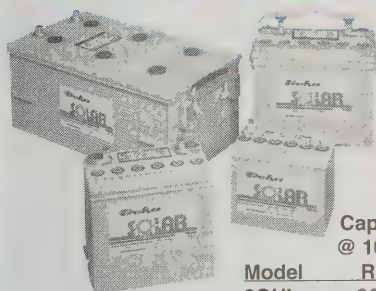
The Solar Module Kits include a solar module, the SunWize SW-1L6 prewired voltage regulator with output cable and a fixed tilt, 45" side-of-pole mount. The waterproof controller has a multi-function LED indicator and fuse protection. 20 year warranty. OEM 5 and 10 kits include 5' cable and OEM 20 and 40 10' cable.



Kit Model	Rated Voltage	Rated Power	Open Circuit Voltage	Rated Current	Size (inches)	Weight (lbs)	HRO Price
OEM5	16.4	5 W	20.5	.31 A	11.82 x 9.84	7	\$169.95
OEM10	16.4	10 W	21	.61 A	15.15 x 14.76	8.5	\$229.95
OEM20	16.5	20 W	21	1.22 A	20.86 x 16.93	12.5	\$299.95
OEM40	16.7	40 W	21	2.40 A	38.38 x 17.13	18.5	\$399.95



## Batteries



The valve-regulated, gelled-electrolyte Deka Solar batteries offer reliable, maintenance free power for renewable energy applications. All models 12 VDC. Sealed construction eliminates periodic watering, corrosive acid fumes and spills. The electrolyte will not stratify so no equalization is required. These batteries are rated non-spillable by ICAO, IATA and DOT. Safe to ship by truck or air.

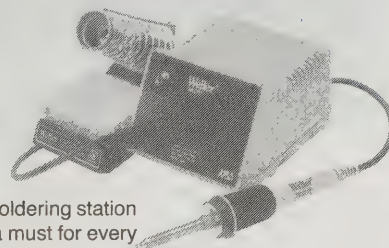
Model	Capacity @ 100 Hr. Rate	Capacity @ 20 Hr. Rate	Size (inches)	Weight (pounds)	HRO Price
8GUI	36 Ah	31 Ah	7.75 x 5.13 x 7.25	24	\$119.95
8G22NF	56.5 Ah	48 Ah	9.4 x 5.5 x 9.25	39	\$139.95
3G27	98 Ah	86 Ah	12.75 x 6.75 x 9.87	64	\$219.95

## Soldering Equipment

# Weller®

## WTCPT Soldering Station

HRO Price \$129.95



A soldering station is a must for every ham shack.

- Special "closed loop" method of controlling maximum tip temperature.
- Transformer powered with macro style, low voltage, temperature controlled soldering iron.
- Power unit housing features impact resistant plastic.
- Quick disconnect plug for iron and lighted on / off switch.
- Separate conductor grounds iron tip and terminates at third pin of power cord.
- Uses PT series tips and operates at 600°F, 700°F and 800°F.

## WLC-100 Solder Station

HRO Price \$49.95



40 watt solder station, 110 volts. Adjustable 5-40 watts with safety guard solder iron. Includes holders, sponge and tip.

## 8200 Solder Gun

HRO Price \$39.95

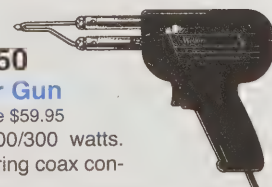
100/140W, 110 V. Ready to solder in 6 seconds. Finger tip selection of high/low power. Great for soldering coax connectors.



## D650 Solder Gun

HRO Price \$59.95

Solder gun, 200/300 watts. Great for soldering coax connectors outside.



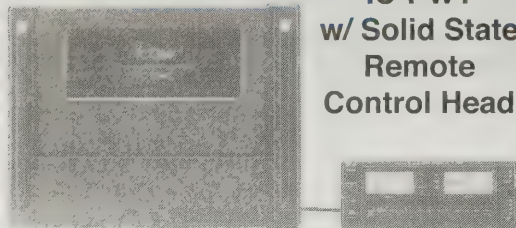


# AMPLIFIERS



**ICOM**

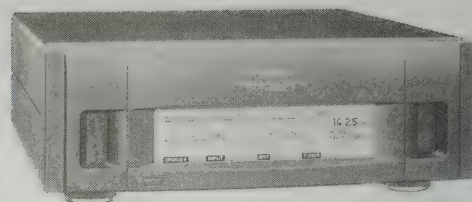
**IC-PW1  
w/ Solid State  
Remote  
Control Head**



Icom's linear amp provides wide frequency coverage with up to 1kW output requiring only a 100-watt maximum input. The duty cycle is 100 percent with full break-in operation. It covers amateur bands 160 to 15 meters plus 6 meters. Includes an automatic antenna tuner for all bands. Internal circuitry allows the ALC to be adjusted over a wide range so the PW1 to be used with almost any rig, not just Icom. Operates on 110 or 220 VAC 50 or 60 cycle.

**YAESU**

**Quadra System  
\$3999.95 - HRO Price**



Here's all the linear amplifier you should need for operation on both HF (160 to 15 meters) and 6 meters. It has automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990, and the FT-900 HF radios.

The amp has 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC. The

HRO will provide 10 meter modification information to amplifier customers upon receipt of a copy of your valid, current amateur radio license.

separate power supply, the VP-1000 allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is reduced to 500 watts on HF.

The Quadra is equipped with a built-in high speed tuner to match the amp to your antennas. It has four antenna outputs and two inputs. The multifunction omniglow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

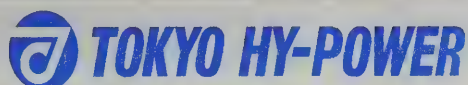
Maker	Model	Frequency Range	Modes	Power In	Power Out	Voltage	Current	Pre-amp	Connector	Wgt	HRO Discount Price
Ameritron	AL-1500	160-15 M*	SSB, CW	65 W	1500+ W	220 VAC	15 A	--	SO-239	50 lbs#	\$2,599.95
	AL-1200	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	--	SO-239	50 lbs#	\$2,299.95
	ALS-500M	160-15 M*	SSB, CW	100 W	500 W	13.8 VDC	80 A	--	SO-239	7 lbs	\$799.95
	AL-572	160-15 M*	SSB, CW	100 W	1300 W	110/220 VAC	12 A 110V	--	SO-239		\$1,399.95
	ALS-600	160-15 M*	SSB, CW	100 W	600 W	110/220 VAC	16 A 110V	--	SO-239	13 lbs#	\$1,129.95
	AL-80B	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC	15/10 A	--	SO-239	54 lbs	\$1,249.95
	AL-800	160-15 M*	SSB, CW	100 W	750 W	110 VAC	12 A	--	SO-239	67 lbs	\$1,699.95
	AL-800H	160-15 M*	SSB, CW	55 W	1500 W	240 VAC	9 A	--	SO-239	69 lbs	\$2,399.95
	AL-811	160-15 M*	SSB, CW	75 W	600 W	110/220 VAC	8/4 A	--	SO-239	40 lbs	\$669.95
Icom Mirage	AL-811H	160-15 M*	SSB, CW	75 W	800W	110/220 VAC	8/4 A	--	SO-239	41 lbs	\$799.95
	AL-82	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	--	SO-239	52 lbs#	\$2,299.95
	IC-PW1	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC		--	SO-240	55 lbs	\$4,699.95
	A -1015G	50-54 MHz	All	10 W	150 W	13.8 VDC	23 A	yes	SO-239	5 lbs	\$359.95
	B-34	144-148 MHz	FM	2 W	35 W	12-15 VDC	4 A		SO-239	2 lbs	\$89.95
	B-34G	144-148 MHz	FM	2W	35 W	12-15 VDC	4 A	yes	SO-239	2 lbs	\$99.95
	BD-35	143-149/430-450	FM	7 W	45 W	12-15 VDC	7 A		SO-239	3 lbs	\$169.95
	B-310G	144-148 MHz	All	4 W	100 W	13.8 VDC	15 A	yes	SO-239		\$219.95
	B-1018G	144-148 MHz	All	10 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	\$399.95
	B-1030G	144-148 MHz	All	10 W	300 W	13.8 VDC	48 A	yes	SO-239		\$729.95
	B-2518G	144-148 MHz	All	25 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	\$299.95
	B-2530G	144-148 MHz	All	25 W	300 W	13.8 VDC	48 A	yes	SO-239	15 lbs	\$729.95
	B-5018G	144-148 MHz	All	50 W	160 W	13.8 VDC	24 A	yes	SO-239		\$299.95
	B-5030G	144-148 MHz	All	50 W	300 W	13.8 VDC	48 A	yes	SO-239		\$699.95
	C-22G	222-225 MHz	All	2 W	20 W	13.8 VDC	5 A	yes	SO-239	2 lbs	\$159.95
	C-211G	222-225 MHz	All	2 W	110 W	13.8 VDC	20 A	yes	SO-239	5 lbs	\$349.95
	C-1012G	222-225 MHz	All	10 W	120 W	13.8 VDC	5 A	yes	SO-239	5 lbs	\$349.95
	C-2512G	222-225 MHz	All	25 W	120 W	13.8 VDC	20 A	yes	SO-239	5 lbs	\$329.95
	C-2522G	222-225 MHz	All	30 W	200 W	13.8 VDC	42 A	yes	SO-239		\$699.95
	D-15N	425 - 450 MHz	All	2 W	15 W	13.8 VDC	3 A	--	N type		\$189.95
	D-26N	430-450 MHz	All	2 W	60 W	13.8 VDC	12 A	--	N type	2 lbs	\$289.95
	D-1010N	430-450 MHz	All	10 W	100 W	13.8 VDC	20 A	--	N type	5 lbs	\$399.95
	D-3010N	430-450 MHz	All	30 W	100 W	13.8 VDC	20 A	--	N type		\$379.95
	D-100-ATVN	429 MHz ATV	All	1 W	52 W	13.8 VDC	20 A	--	N type		\$429.95
	D-1010-ATVN	430 MHz ATV	All	10 W	100 W	13.8 VDC	20 A	--	N type		\$429.95
	SG-500	160-15M*	All	1-150W	500 W	13.8 VDC	80-90A**		SO-239	2 lbs	\$1,299.95
	HL-2.5KFX††	160-10 M	SSB, CW	100 W	1500 W	110/220 VAC	30 A	--	SO-239	57.3 lbs	CALL
	HL-1.5KFX	160-10 M + 6M	SSB, CW	85 W	1000 W	110/220 VAC	10 A	--	SO-239	45.5 lbs	\$3,099.95
	HL-1.2KFX††	160-10 M	SSB, CW	90 W	750 W	110/220 VAC		--	SO-239	33 lbs	CALL
	Yaesu Quadra System	160-15 M* + 6m	SSB, CW	100 W	1000 W	110/220 VAC	†	--	SO-239	21 lbs	\$3,899.95

\*Owner modifiable for 10 m #Add 35 pounds. Transformer shipped in separate package. \*\*SGC PS-50 recommended †VP-1000 power supply inc. ††The HL-1.2KFX and HL-2.5KFX have not been approved by the Federal Communications Commission. These devices are not and may not be offered for sale, lease, or sold or leased until the approvals of the FCC have been obtained.

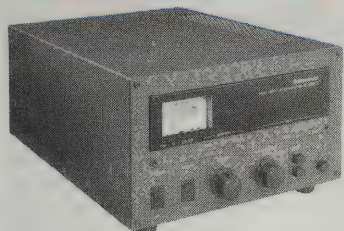


# AMPS / TUNER

# SURGE PROTECTORS



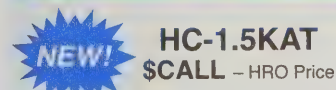
## HF Amplifiers



**HL-1.5KFX**  
\$3099.95 - HRO Price

1.8 MHz - 29 MHz amateur bands including WARC bands plus 50 MHz, FCC certified, built-in power supply 110 or 220 VAC (240 V preferred). 10.7 x 5.6 x 14.4 inches, approx. 45 pounds. Fully solid state, auto-band switching with most Icom, Kenwood, Yaesu radios (cables included). Manual band switching as well. Two antenna ports selectable from front panel. Built-in RF power meter. HF 1 KW PEP SSB (typical). 6m 650 W PEP output. RF drive 85 W typical (100 W max). Great for DX-peditions or home station. External fan option for high duty cycle RTTY. Modes: SSB / CW / RTTY.

## HF Auto Antenna Tuner

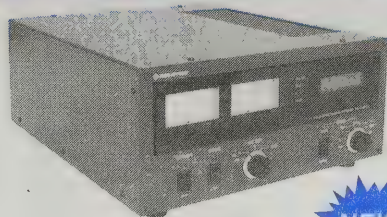


**HC-1.5KAT**  
\$CALL - HRO Price

HC-1.5KAT is a high power HF auto antenna tuner designed to work with Tokyo Hy-Power HL-1.5KFX and HL-2.5KFX linear amplifiers. When combined with these THP amplifiers, the band change is made automatically through the band data signal from the radio and the amplifier.

It handles maximum power of 1.8 kW pep / cw when the intrinsic antenna SWR is no more than 2.0 to 1. Maximum impedance matching range is SWR 4 to 1 on HF and 3 to 1 on 6 m.

Two high grade 3.5 kV rating 200 pF air variable capacitors form a "T" match circuit being driven by high speed stepping motors. Our own tuning algorithm together with an advanced 16 bit micro-processor enables an extremely fast tuning speed of one second typical and four seconds maximum.



**HL-2.5KFX**  
\$CALL - HRO Price



The HL-2.5KFX is a compact, light weight desktop HF linear power amplifier with the maximum input power of 3 kW. It boasts of being smallest and lightest in the industry using our solid state broad band power amp technology.

Typical output power is 1.8 kW PEP / SSB (1.5 kW CW min.) on entire HF bands with the drive power of 80-95 W. The built-in band decoder will let you forget about the band setting when the amplifier is hooked to your modern radio through such band data cables as Icom CI-V, DC voltage (Icom, Yaesu), and RS-232C (Kenwood). There is a band data output socket to command the external auto antenna tuner, HC-1.5KAT.

Two pieces of extremely rugged high voltage RF power FET's of the latest design are used in push-pull form. 1,500 W of power dissipation and 500 V of breakdown voltage. Several protection circuits are built in such as over drive, high antenna SWR, thermal shutdown. Two large analog meters monitor Pf and Vd / Id / Pr. On the LCD panel meter are shown freq. band, heat sink temperature, mode of auto band setting, etc.



**HL-1.2KFX**  
\$CALL - HRO Price



Compact, rugged HF linear amp operates on all amateur bands from 1.8 to 28 MHz, including WARC bands. Class AB parallel push-pull for 750 W output on SSB, 650 W on CW, or 400 W RTTY. Input 75-90W. QSK compatible for fast CW break-in. Forced air cooling. Runs on 100-120 or 200-240 VAC.

The HL-1.2KFX and HL-2.5KFX have not been approved by the Federal Communications Commission. These devices are not and may not be offered for sale, lease, or sold or leased until the approvals of the FCC have been obtained.

## Lightning Protection

## PolyPhaser® CORPORATION

### Coaxial Impulse Suppressors

Hermetically-sealed voltage sensitive gas tubes and other components assure that surge voltages and currents will not reach your equipment.

### Flange Mounts HRO Price \$61.95

Model	Freq. Range MHz	Maximum Power Watts
IS-50 UX-CO	1.5-400	HF - 2 kW VHF - 35 W UHF - 125 W
IS-50 UX-C1	50-700	VHF - 375 W UHF - 125 W
IS-50 NX-C2 w/ N connect	125-1000	VHF - 375 W UHF low - 125 W 800 MHz-1 GHz - 50 W

### Bulkhead Mounts HRO Price \$64.95

Model	Freq. Range MHz	Maximum Power Watts
IS-B50 LU-CO	1.5-400	HF - 2 kW VHF - 375 W UHF - 125W
IS-B50 LU-C1	50-700	VHF - 375 W UHF - 125 W
IS-B50 LN-C2 w/ N connect	125-1000	VHF - 375 W UHF low - 125 W 800 MHz-1 GHz - 50 W

### Rotator Control Protector

#### Model IS-RCT

Provides protection for rotator controllers, motors, control box and other nearby equipment. **HRO Price \$99.95**

### In-Line Phone Line Protector

#### Model IS-SPTL

Multi-stage protection, with large bandwidth and fast response time. For telephone trunk lines—handles standard ring voltages to 105 Vrms. Handles surges up to 36 kA. **HRO Price \$57.95**

### Power Line Extension Protector

Two-outlet extension cords with master on/off switch and circuit breaker offer added power line protection.

Model	Length	HRO Price
IS-PLDO-120-15A	15'	120V@15A \$169.95
IS-PLDO-120-20A	6'	120V@20A \$199.95

### Grounding Panel

#### Model CU-SPGP

A .062" thick copper plate mounted on a painted 1/2" plywood backing. Mounting protectors and a single ground point established for station equipment. Comes with concrete anchors, all mounting screws, 10' of 1.5" copper grounding strap, 2 brass sandwich plates, and joint compound. 18" x 12". **HRO Price \$69.95**



# CABLES / COAX / CONNECTORS

## Cable Assemblies

### CABLE X-PERTS Ready-Made Coax Cable Assemblies

Model	Connector Both Ends	Burial	UV Resistant	Shields	Attenuation @ 100 Feet	Best Frequencies
CXP1318FC	PL259	Yes	Yes	2 (100% boonded foil + 95% TC Braid V/P 84%)	50 MHz 1.1 150MHz 1.9 450MHz 3.3	50-450 MHz
CXP008C	PL259	No	Yes	1 (95% BC Braid) V/P 78%	10 MHz 0.51 30MHz 0.9 50MHz 1.2	1-50 MHz
CX1318FN	"N"	Yes	Yes	2 (100% boonded foil + 95% TC Braid V/P 84%)	150MHz 1.9 450MHz 3.3	150 MHz and Higher
CXP08XC	PL259	No	Yes	1 (95% BC Braid) V/P 78%	10 MHz 0.98 30MHz 2.0	1 - 30 MHz
CPX213C	PL259	Yes	Yes	1 (97% BC Braid) V/P 66%	10 MHz 0.62 30MHz 1.2	1 - 30 MHz (High Power)

RG213/U w/PL259		
Part Number	Length (feet)	HRO Price
CXP213C100	100	\$112.95
CXP213C50	50	\$69.95
CXP213C6	6	\$24.95
CXP213C3	3	\$22.95
RG8/U Foam w/PL259		
CXP008C100	100	\$99.95
CXP008C50	50	\$55.95
CXP008C25	25	\$39.95
CXP008C12	12	\$32.95
CXP008C6	6	\$29.95
CXP008C3	3	\$26.95
RG8X-Mini w/PL259		
CXP08XC100	100	\$54.95
CXP08XC75	75	\$44.95
CXP08XC50	50	\$34.95
CXP08XC25	25	\$24.95
CXP08XC18	18	\$22.95
CXP08XC6	6	\$17.95
CXP08XC3	3	\$15.95
9913-type Flexible w/N-Connector		
CXP1318FN150	150	\$190.95
CXP1318FN100	100	\$132.95
CXP1318FN50	50	\$78.95
CXP1318FN25	25	\$51.95
CXP1318FN6	6	\$30.95
CXP1318FN3	3	\$27.95
9913-type Flexible w/UHF Connectors		
CXP1318FC100	100	\$126.95
CXP1318FC50	50	\$63.95
CXP1318FC6	6	\$22.95
CXP1318FC3	3	\$20.95
Tinned Copper Ground Braid		
235	1" wide	\$1.99/ft
2332	1/2" wide	\$0.67/ft
235RT-5	1" 5 ft long*	\$13.95
235RT-10	1" 10ft long*	\$17.95
2332RT-5	1/2" 5ft long	\$7.95
2332RT-10	1/2" 10ft long*	\$9.95

\* w/Ring Terminals

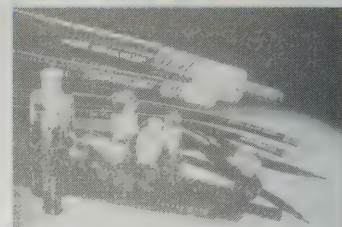
## Coax-Seal



Coax-Seal will seal all types of coax fittings, baluns, antenna parts and connectors of any shape. Adheres to most surfaces. Wrap Coax-Seal around the object you want to protect and then mold it into shape. Keeps moisture out of the coax fitting on antenna feed lines. Need to make a change? Just remove it and start over. HRO Price: \$2.49 / roll

Because of the current world-wide volatility of copper prices, HRO wire and coax prices are subject to change. Please call toll free to check current prices.

## Coax & Connectors



Andrew coax and all the matching connectors you will need are available as a special order drop shipment. Contact your nearest HRO store for complete details.

Model #	Cable Type	Diameter Inches	\$/100 feet*
LDF2-50	Foam Dielectric	3/8 inch	189.00
LDF4-50A	Foam Dielectric	1/2 inch	255.00
LDF5-50A	Foam Dielectric	7/8 inch	585.00
FSJ4-50B	Superflex	1/2 inch	373.00

\*Plus Shipping

## Patch Cables

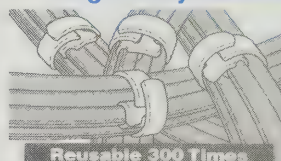
Soldered with teflon PL-259 silver connectors.

Item	Description	HRO Price
HRO213/100U	100' 213 coax with PL259	\$99.95
HRO213/125U	125' 213 coax with PL259	\$119.95
HRO213/3U	3' 213 coax with PL259	\$16.95
HRO213/50U	50' 213 coax with PL259	\$54.95
HRO213/6U	6' 213 coax with PL259	\$17.95
HRO8X/100U	100' 8X coax with PL259	\$59.95
HRO8X/18U	18' 8X coax with PL259	\$19.95
HRO8X/25U	25' 8X coax with PL259	\$26.95
HRO8X/3U	3' 8X coax with PL259	\$11.95
HRO8X/50U	50' 8X coax with PL259	\$39.95
HRO8X/6U	6' 8X coax with PL259	\$14.95
HRO8X/75U	75' 8X coax with PL259	\$46.95

## Cable Ties

**RIP-TIE**

### Light Duty Cable Management



These are the perfect products for managing all those cables in the shack or computer room.

Reusable 300 Times

Model	Size		HRO Price
Y-05-010-BLK	1/2" X 5"	10 Pack	\$7.95
Y-05-010-Rainbow	1/2" X 5"	10 Pack	\$7.95
Y-08-010-BLK	1/2" X 8"	10 Pack	\$9.95
Y-08-010-Rainbow	1/2" X 8"	10 Pack	\$9.95
G-05-030-GRN	1/2" X 30 ft Roll		\$4.95



## Connectors

Model	Description	HRO Price
306	BNC to UHF Adapter (BNC-255)	\$5.99
609	N to UHF Adapter (4400)	\$9.99
407TS	4 hole SO-239 Chassis Connector	\$4.99
604	Double Male UHF (83-877)	\$8.99
RFU536	UHF Barrel (83-1J)	\$4.99
UG-363-4	Long UHF-UHF Barrel (83-1F)	\$6.99
RFU532	RT. Angle Teflon, Gold Pin (83-1AP)	\$8.99
RFU533	UHF "T" (83-1T)	\$6.99
303	BNC to UHF Adapter (31-28)	\$6.99
611	UHF to N Adpter (14000)	\$8.99

## Communications Cable

# Times

Call HRO for Low Discount Prices on Times Cable

### LMR-200 – RG58 type

This is a standard RG58 'type' outdoor cable that is ideal for jumper assemblies, short antenna feeder runs, or any application requiring an easily routed, low loss RF cable. It has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 83%. It will withstand 1000VDC, a peak power of 2.5 kW, and shielding effectiveness is >90 dB.

### LMR-240 – RG8X type

This RG8X 'type' outdoor cable has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 84%. It will withstand 1500 VDC, a peak power of 5.6 kW, and shielding effectiveness is >90 dB.

### LMR-400 – RG8 / RG213 type

This is a standard RG8 / RG213 'type' outdoor cable that has a solid BCCA inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 85%. It will withstand 2500 VDC, a peak power of 16 kW, and shielding effectiveness is >90 dB.

### LMR-400-UltraFlex

Similar specification as LMR-400 with TPE jacket.

# Belden



## Coax

Coax can be purchased in any length up to 1000 feet. 1000' continuous lengths of 9913 or 8214 must be sent by truck.

### 8214 - RG8 / U

8214 is a standard RG8 / U, #13 stranded copper center conductor, cellular polyethylene insulation, 97% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 1.8 dB loss per 100' at 100 MHz. The most popular cable for HF/VHF/UHF. Use when long cable runs are not required.

### RG213 / U

RG-213 / U coax, #13 stranded copper center conductor, solid polyethylene insulation, 97% bare copper shield, non-contaminating PVC jacket, 50 ohm impedance, 66% velocity factor and 2.2 dB loss per 100' at 100 MHz. This RG-8 type cable is best for HF. It may be buried.

### 9913F-7

9913F-7 is RG8-type coax, #9.5 stranded copper conductor, foam polyethylene insulation, 100% foil plus 88% braid shield, PVC jacket, 50 ohm impedance, 84% velocity factor and 1.4 dB loss per 100' at 100 MHz. The best cable for VHF and UHF applications.

### 9258 - RG8X

RG8X is small diameter coax, #16 stranded copper center conductor, cellular polyethylene insulation, 95% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 3.7 dB loss per 100' at 100 MHz. Good for short VHF runs and most HF uses.

### 9356 - RG8 / U

100' roll of 8214 RG8 / U coax with PL-259 connectors (crimp type) installed on each end for your convenience.

## Rotator Cable

HRO carries two **Belden rotator cables**. Use standard duty cable for runs up to 100 feet. For longer runs, please use heavy duty cable. Belden quality is **tops** in the industry.

**8 wire, standard duty - Model 8448** - 8 wire cable using six #22 and two #18 tinned copper conductors. PVC insulation; chrome PVC jacket.

**8 wire, heavy duty - Model 9405** - 8 wire cable using 6 - #18m and 2 - #16 tinned copper conductors. PVC insulation; chrome PVC jacket.

### When Ordering Cable

Please order cable in multiples of 50 feet. Continuous length spools up to 1000 feet are available. Call for quotes.

# BALUNS

# CAL-AM

## Baluns



Low-profile baluns mount directly to your yagi boom for easy installation. All are 50 ohms and broad band. From left to right, EB-3: 7-30 MHz, 10 kW CCS, AWG 10 wire, DIN-7-16 connector; EB-1: 1.8-30 MHz; EB-2: "shorty" for tri-banders and LP's, 10-60 MHz. EB-1 and EB-2 are 3 kW, AWG 14 wires, connector mates with PL-259. Wire leads are easy to connect and are color coded for antenna phasing. CAL-AM baluns are vacuum impregnated and sealed for durability and protection from the weather. **HRO Price EB-1 \$46.95; EB-2 \$42.95; EB-3 \$259.95**

## Mark-V Antenna Spring



At last – a commercial grade antenna spring of polished, all-stainless construction. The MARK-V provides improved immunity to side winds, gusts, bumps, etc. over smaller, wimpy springs. It reduces fading due to match/resonance changes while in motion. The MARK-V is 2" in diameter by just under 5" long, with ham-standard 3/8-24 threaded hole in each end. **HRO Price \$89.95**

## Mast Mount

# Ironworks

### CQ-1

The CQ-1 is a spring loaded boom to Mast plate that allows for quick connect of antenna to mast. Great for dxpeditions / VHF rovers / emergency ops. Attach one plate to the antenna boom and the other plate to the mast. Mate the two plates by placing them together so that spring loaded pins go thru the opposite plate and lock into place when the plate is brought to level. U bolts and U-bolt hardware NOT included. Good up to 2" diameter mast / boom. Not for permanent installations. **HRO Price \$34.99**

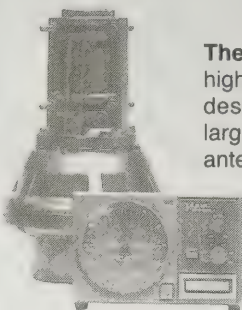
### CQ-V

For Vertical Antennas. **HRO Price \$34.99**





Yaesu's high quality rotators for amateurs include models for medium to large arrays and for satellite work. There are also provisions for computer control. Contact your nearest HRO for more specifications and discount prices on Yaesu products.



## G-2800DXA

The G-2800DXA is a high-technology rotator designed to turn the largest tower-mounted antenna arrays.

## G-800SA / G-800DXA

The G-800 rotator series is designed for medium to heavy loads and antennas up to 20 square feet. The G-800DXA is the same as the G-800SA with the addition of presets.

## Rotator Computer Controllers

Rotator	GS-23	GS-232	GS-232B
G-800S/SDX	✓	1	1
G-1000S/SDX	✓	1	1
G-2000S/SDX	✓	1	1
G-2300S/SDX	✓	1	1
G-2700S/SDX	✓	1	1
G-2800S/SDX	✓	1	1
G-800DXA			✓
G-1000DXA			✓
G-2800DXA			✓
G-5400B		✓	✓
G-5600B		✓	✓
G-5500		✓	✓
G-400		2	3
G-500	2	2	3
G-500A	2	2	3
G-500B	2	2	3
G-5500	2	2	3

✓ Fully Compatible

1. Requires C-1000 Interface Cable
2. Requires GX-500 Interface for GS232
3. Requires GX-500 Interface for GS-232B

## Rotator Specifications

	Model	Input Voltage	Motor Voltage	Rotation Time	Stationary Torque	Rotation Torque	Maximum Windload	Max. Vert Load	Max. Mast Size	Cable Type	Weight lbs (kg)	HRO Price
M2	OR-2800DC	110/220 VAC	28 VDC	55 sec	17,000 in lbs	3200 in lbs	35 sq ft	1800 lbs	3-1/8 in	8-wire	42 (19)	CALL
Yaesu	G-450A	110 V	24 VDC	51 sec	217 ft lbs	39.8 ft lbs	10 sq ft	242 lbs	2 in	5-wire	7 (3.2)	\$249.95
	G-800SA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	\$349.95
	G-800DXA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	\$399.95
	G-1000DXA	110 VAC	24 VDC	55 sec	5200 in lbs	79 ft lbs	22 sq ft	440 lbs	2.5 in	6-wire	15 (6.8)	\$499.95
	G-2800DXA	110 VAC	24 VDC	55 sec	20,832 in lbs	219 ft lbs	34 sq ft	880 lbs	2.5 in	6-wire	26 (11.8)	\$1,129.95
	G-5500	110 VAC	24 VDC	58 sec	289 ft-lbs	*	10.7 sq ft	440 lbs	2.5 in	6-wire	20(9)	\$629.95
	G-550	110 VAC	24 VDC	67 sec	289 ft-lbs	101 ft-lbs	10.7 sz ft	440 lbs	1-5/8 in	6-wire	7.9 (3.6)	\$249.95

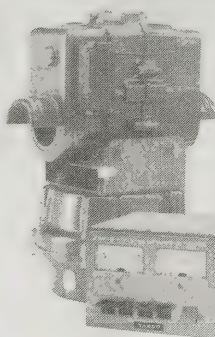
\* Elevation 101 ft-lbs, Azimuth 44 ft-lbs

## G-1000DXA

The G-1000DXA is designed to handle bigger arrays up to 22 square feet. A great value.

## G-450A

The G-450A is ideal for smaller HF and VHF/UHF antennas. Features 360 degree radial compass display with overlap.



HRO Price  
\$629.95

## G-5500

This is the most popular azimuth and elevation rotator for satellite, moon-bounce or other space communications work. It provides horizontal and vertical antenna rotation in a single unit. The control box has two large meters, one showing elevation and the other azimuth. Meter aiming accuracy is within  $\pm 4\%$ . The G-5500 provides 180° elevation rotation with a rotation time of 67 seconds. A 360° azimuth rotation takes just 50 seconds. This rotator accepts up to a 2.5" mast, a maximum 1-5/8" horizontal cross-boom and 440 pounds of vertical load. Computer controllable with optional GS-232 computer interface. **HRO Price \$649.95**

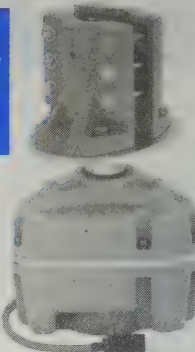
## G-550

This is an elevation rotator for satellite work. The control box shows elevation in degrees. **HRO Price \$249.95**

## Rotator Separation Kit

For some applications it is desirable to separate the azimuth from the elevation rotator on the tower. This separation kit provides all the hardware for the rotator to implement this separation. **HRO Price \$23.95**

# ROTATORS



## Orion OR-2800DC Rotator

The Orion OR-2800DC is engineered for long life, reliability and performance while turning large antennas or systems. It has a strong ductile iron mast clamp to support up to 3-1/8" masts (optional long bolts required), extended and hardened drive shaft, and prop-pitch style torque plate. The rotator housing fits inside most popular towers and mates to standard tower / rotator plates.

The RC2800P Control Box has digital readout, variable speed control, slow start, and reverse delay, programmability, preset, 2 rotator capacity, coast-down, true AZ readout-continuous and infinite limit position control. The USA-made OR-2800DC has a one year warranty. **HRO Price \$CALL**

Wind Area Capacity	35 sq. ft.
Starting Torque	4200 in. lbs.
Rotating Torque	3200 in. lbs.
Breaking Torque	17000 in. lbs
Vert. Load Capacity	1800 lbs.
Mast Size (O.D.)	1.75-3-1/8"
Rotation Speed (360)	55-270 sec.
Readout Accuracy	1 degree
Input Voltage	110/220 AC
	50/60 Hz
Motor Voltage	28-42 VDC
Cable Type	8 conductor
Weight (Rotator unit)	42 lbs.



# hy-gain

Hy-gain rotators are the first choice of hams around the world! One is perfect for your antenna configuration.

## Ham - IV

The popular Ham-IV is designed for medium antenna arrays up to 15 square feet. It features a dual 98 ball bearing race for load bearing strengths and an electric locking steel wedge brake. Maximum mast size 2 1/16". **HRO Price \$529.95**

## Tailtwister Series II

This unit handles medium communications arrays up to 20 square feet wind load area. Available with the DCU-1 Pathfinder digital control box or standard analog control box. Has 138 ball bearings for large load bearing strength. Maximum mast size 2 1/16". **HRO Prices: T2X \$599.95, T2XD \$979.95**

## Ham - V

For medium antenna arrays up to 15 square feet wind load. Includes the DCU-1 Pathfinder digital control unit. No more terminal strips. Features inch connector plus 8-pin plug at the control box. Maximum mast size 2 1/16". **HRO Price \$949.95**

## HDR-300A

Choose this rotator for king-sized antenna arrays up to 25 square feet of wind load. Heavy-duty self-centering steel mast clamp and hardware. Digital display accurate to 1 degree. **HRO Price \$1379.95**

## AR-40

Especially for large FM-TV and compact communication antenna arrays up to 3.0 square feet wind load area. Dual 12 ball bearing race. Automatic position sensor never needs resetting. Maximum mast size 2 1/16". Includes MSLD light duty lower mast support. **HRO Price \$289.95**

## CD-45II

The CD-45II handles up to 8.5 square feet of antenna wind load when mounted inside the tower or 5 square feet with the included MSLD light duty lower mast adapter. Has 58 ball bearing race. Maximum mast size 2 1/16". **HRO Price \$389.95**

## DCU-1 Pathfinder

A digital control unit for the T2S, Ham-IV and Ham-V rotators. **HRO Price \$649.95**

## Antenna Rope

### Synthetic Textiles

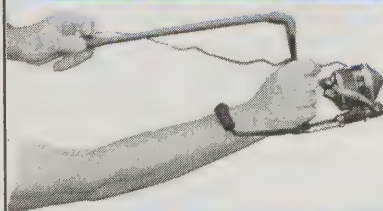
#### Black Dacron® Polyester

This antenna rope is constructed of strong, double braid Dacron® polyester. It is black for UV protection and has excellent resistance to mildew and abrasion. The rope ties and cuts easily, sealing effectively with a hot knife. No expensive hardware is required. Sizes and prices shown in the chart.

Size	Model	Strength	HRO Price*
3/32"	ST-3/32-100	260+ lbs	\$9.95
3/16"	ST-3/16-100	770+ lbs	\$14.95
5/16"	ST-5/16-100	1790+ lbs	\$19.95

\*\* Price per 100 feet

## Line Thrower



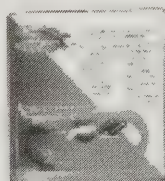
## EZ HANG

EZ HANG 2 can be used to "throw" a line up to 100 feet over a tree or other object. Cable pullers can use EZ HANG to "throw" a line through a dropped ceiling/plenum and avoid using long pull-rods. It cuts installation time and your cost dramatically.

EZ HANG's basic construction is steel attached to a reel that is corrosive resistant plastic and stainless steel. The reel comes with 300 feet of 10-pound-test monofilament line installed, a quick-disconnect clip to release the weight and an easy-to-see "bright yellow" one-ounce lead weight.

### EZ HANG 2 Package

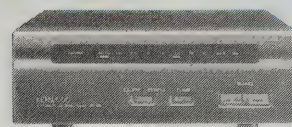
includes spare bands, 2 weights and clips and the EZ HANG **HRO Price \$89.95**



Note: This is a "slingshot" device. Before ordering, please check local laws regarding possession and / or use of a slingshot.

# ANTENNA TUNERS

## KENWOOD

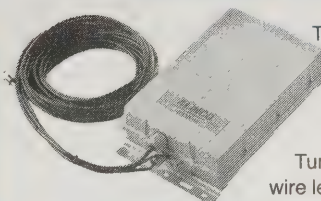


### AT-50

A fully automatic antenna tuner to use with the TS-50 and other 100 watt HF transceivers. Useful for both mobile or fixed operation. Accurate tuning by pressing the AT TUNE key on the TS-50. Can be installed remotely. **HRO Price \$309.95**

## ALINCO

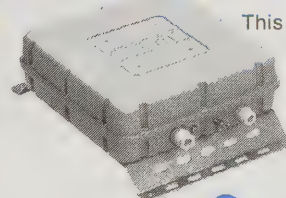
### EDX-2



This automatic tuner is designed for use with the Alinco DX-70 HF radio but may be adapted for use with most HF rigs. Tunes from 10 to 160 m with wire lengths of 8 to 80 feet (40' for 160m). **HRO Price \$299.95**

## YAesu

### FC-800



This automatic antenna tuner operates with the FT-890 HF transceiver. The tuner is fully automatic and operations can be controlled from the front of the FT-890. **HRO Price \$469.95**

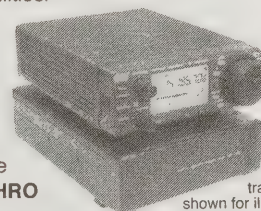
## ICOM

Icom's antenna tuners are automatic and, using the front panel controls, can be used with most HF exciters. Random wire and balanced line antennas cannot be used with the resonant antenna tuners. See the table on Page 13 for more tuner / radio compatibilities.

### AT-180

#### Resonant Tuner

Fully automatic 100 W tuner styled for the IC-706. HF/6 meters. **HRO Price: \$364.95**



IC-706 transceiver shown for illustration purposes

### AH4

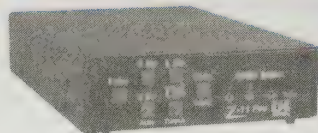
#### Random Wire Tuner



This automatic tuner covers 3.5 - 50 MHz with a 7 meter or longer antenna or the optional AH-2b antenna element (7 MHz to 50 MHz). Use with all Icom transceivers. Forty-five memories store channel information for quick tuning. Installation is simple: no adjustments are necessary. Just connect the control and antenna cables. Its small size allows installation in a variety of locations. **HRO Price \$259.95**



## Portable Tuners



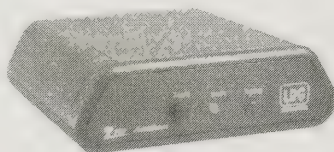
### Z-11Pro

#### The Return of a Legend

The original portable Z-11 was one of LDG's most popular tuners, accompanying adventurous hams to their backyards, or to the ends of the earth. Now meet the Z-11Pro, everything you always wanted in a small, portable tuner designed from the ground up for battery operation.

Only 5" x 7.7" x 1.5" and weighing only 1.5 pounds, it handles 0.1 to 125 watts, making it ideal for both QRP and standard 100 watt transceivers from 160 - 6 meters.

With 8,000 memories in LDG's exclusive "3-D Memory" array, the Z-11Pro uses LDG's state-of-the-art processor-controlled switched-L tuning network. It will match dipoles, verticals, inverted-Vs or virtually any coax-fed antenna. With an optional LDG balun, it will also match longwires or antennas fed with ladder-line. **HRO Price \$179.95**



### Z-100

#### Definitive

#### low cost automatic tuner!

Designed from the ground up to provide the 100 watt power handling you asked for, in a small, lightweight package, perfect for portable as well as sitting on your desk in your shack!

The Z-100 will tune with 0.1 to 125 watts (50 watts on 6 meters), making it an excellent choice for almost any radio or operating style. Backpackers and QRP operators will appreciate the latching relays. Power can be removed from the tuner once you have tuned. Additionally, when the tuner is not tuning, it draws nearly zero amps. Additionally, the Z-100 features 200 fast memories which will decrease tuning time up to 95%! **HRO Price \$149.95**

## Automatic Antenna Tuners



*Ready to go right out of the box! No extra cable to buy.*

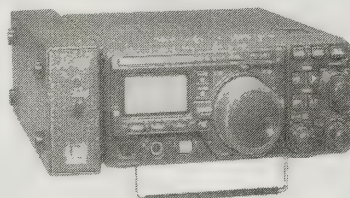
### AT-7000 for the Icom IC-7000

#### The Hottest Radio in the Industry! Now with It's Own Autotuner

*radio not included*

The AT-7000 is the ideal tuner for IC-7000 and other Icom radios. Covers all frequencies from 1.8-54 MHz, and will automatically match your antenna in a flash. Requires just 0.1 W for operation, but will handle up to 125 W (100 W on 6 m), making it suitable for everything from QRP (IC-703 Plus) to a typical 100 W Icom transceiver.

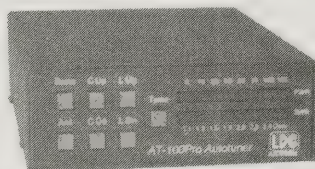
Tune with the AT-7000 or use your radio. Includes over 2,000 memories, uses latching relays, tuning range is 4-800, powered by your radio. Includes Icom interface cable. **HRO Price \$169**



### AT-897

*for the  
Yaesu  
FT-897  
radio not  
included*

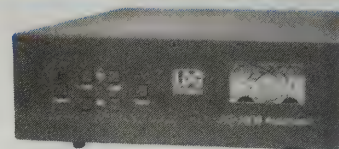
If you own a Yaesu FT-897 and want a broad range automatic antenna tuner, look no further! The AT-897 Autotuner mounts on the side of your FT-897 just like the original equipment. We even added the ability to mount the "feet" on the side of the tuner so when you are transporting your rig by the handle, you can safely set it down and not worry about scratching the case. The AT-897 takes power directly from the CAT port of the FT-897 and provides a second CAT port on the back of the tuner so, if you are using another CAT device, hooking it up couldn't be easier. **HRO Price \$199.95**



### AT-100 PRO

#### Automatic Antenna Tuner

This desktop tuner covers all frequencies from 1.8 - 54 MHz, and will automatically match your antenna in no time. It features a two-position antenna switch, allowing you to switch instantly between two antennas. The AT-100Pro requires just 1 watt for operation, but will handle up to 125 watts, making it suitable for everything from QRP to a typical 100 watt transceiver. The AT-100Pro includes more than 2,000 memories for each antenna, automatically storing tuning configurations for each frequency and band as you use them. **HRO Price \$209.95**

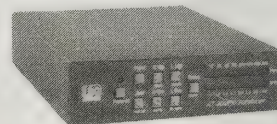


### AT-1000

#### Autotuner Convenience

No more knob spinning or inductor rolling. Tunes your antenna in 1 to 8 seconds when you QSY either in the same band or to a different band! Easy installation and use make this the choice for any Amateur Radio Operator with an amplifier.

Power rating HF (1.8 to 30 MHz): 1000 Watts single side band, 750 Watts CW, 500 Watts digital (RTTY, Packet, etc.) **including 6 meters.** Just about any antenna can be tuned with the AT-1000. The antenna must be between 6 to 800 ohms (approximately 10:1 SWR) in-order to bring the SWR down to 1.5:1. **HRO Price \$499.95**



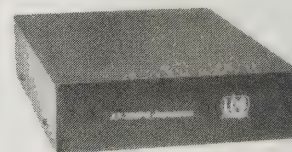
### AT-200 Pro

#### The first

#### auto tuner specifically designed for today's high-powered transceivers

The AT-200 features LDG's new "3-D memory system" allowing up to eight antenna settings to be stored for each frequency. Handles up to 250 watts SSB or CW on 1.8-30 MHz, and 100 watts on 54 MH (**including 6 Meters**).

Rugged and easy-to-read LED bar graphs show power and SWR, and a function key on the front panel allows you to access data such as mode and status. **HRO Price \$249.95**



### AT-200 PC

#### The first autotuner designed specifically for PC rig control

Now you can have a state-of-the-art, high performance automatic tuner and still run your whole station right from your keyboard and mouse.

LDG's AT-200PC is a special version of the popular AT-200Pro, designed for PC control. All of its functions are controlled entirely by a program running on your PC. The tuner itself can be installed out of the way, on the floor or even in another room, interfacing to your PC via a serial or USB cable. **HRO Price \$259**



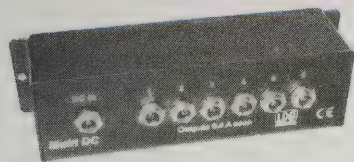


## Distribution

**Your Power Problems – Solved!**

### Multi-DC

**a 12 volt DC Distribution Box**



The provided cables have the right coaxial DC power plug to connect to all your LDG products. The Multi-DC can source up to three amps; each of the six outputs can provide up to .5 amps to your LDG accessories. The Multi-DC comes with an input cable, and six output cables, each 3 feet long.

The six outputs are organized in three groups of two. Each pair is internally regulated to 12 vdc, thermal protected and short-limited; a short circuit just shuts down the regulator and turns off that output. So, with the Multi-DC, you can easily and safely power your LDG tuners and accessories (with more coming, by the way!) **HRO Price \$49**

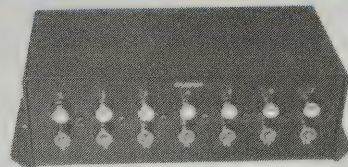


**Two-Year Warranty**

**No Questions Asked!** Every LDG Product comes with our industry leading 2-year warranty on the performance of your product. Just contact us to let us know your problem and we will repair or replace your product - **No Questions Asked!**

## Antenna Switches

**Your Cable Problems – Solved!**



### RCA-14

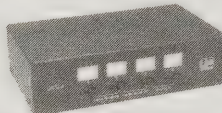
RCA-14 is a breakout box for the accessory jacks on most popular transceivers. It comes with cables with the right DIN plugs, and all the outputs are blessedly simple RCA jacks. You simply plug the RCA-14 into your radio's accessory jacks, and all your ports are right there at your fingertips; just plug and play, one function or all of them, makes no difference. And, you can change things around as often as you like; it's as simple as swapping out an RCA plug.

The RCA-14 comes with a DIN 13 cable, a mini DIN 6 and a mini Din 8. The DIN 13 cable breaks out the functions to RCA jacks 1 - 13, while the mini DIN 6 goes to RCA 1 - 6, and the mini DIN 8 goes to RCA 7 - 14. You can use the DIN 13 or the mini DIN 6 and/or 8, depending on your radio. The RCA-14 is compatible with: Icom 703, 706, 718, 746, 756, 7000 and 7800; Yaesu 187, 857, 897 and 840; Kenwood 480, 570, 2000; Ten Tec Orion. **HRO Price \$59**

### The DTS Series

Tired of that tangled mess of coax and pigtailed in your shack? Always worrying about whether you set the ground switch on your antenna before you left your shack? LDG's new DTS Series antenna switches are for you. Instantly switch your rig between 4 or 6 antennas with the press of a button. Auto-grounding when you shut your rig down. Purchase the additional remote control and put the DTS Series switch anywhere indoors and operate it from your desk. They handle up to 1500 watts of RF power on HF (250 W on 6 M), and can be used with any coax-fed antenna.

**DTS-4 \$79.95,  
Remote \$39.95**



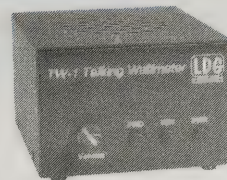
**HRO Prices:  
DTS-6 \$99.95,  
Remote \$49.95**

# ACCESSORIES

## Watt Meters

### The "Talking" Watt Meter

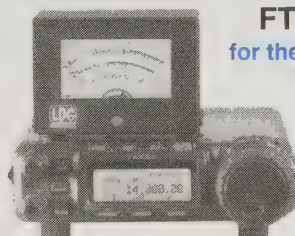
The TW-1 Talking Wattmeter provides an aural spoken indication of power and SWR using a digitally recorded voice. It is ideal for the vision-impaired, for those of us in the "bi-focal set", or just for those times when you need to be looking somewhere else. At the press of a button, the TW-1 speaks the forward power, reverse power or SWR. Three languages are available: English, Spanish and German. It includes its own internal speaker; no external audio hookups are needed. Available soon the TW-2 UHF/VHF. **HRO Price \$149.95**



### FT Meter-Blue

**for the Yaesu FT-897/857**

*radio not included*



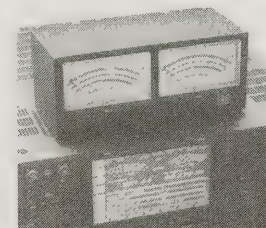
Yaesu's popular FT-857 and FT-897 transceivers are wonders of compact efficiency. These do-anything, go-anywhere transceivers were science fiction just a few years ago, but ham's today are using them in shacks, mobiles and on expeditions from the back yard to the top of the world.

The FT-Meter presents a lush, highly readable 2.5" meter face with calibrated scales for signal strength and discriminator reading on receive, and power output, SWR, modulation, ALC action and supply voltage on transmit. Each function is selectable from the radio's menu. Easily visible from anywhere on your desk or dash, the FT-Meter is illuminated by any external 12 vdc source.

The FT-Meter comes fully assembled and ready to go; just plug it into the radio and you're in the picture like never before. **HRO Price \$49.95**

### DM-7800 Meter

**for the  
Icom IC-7800**  
*radio not included*



The DM-7800 dual meter system provides two 4.5"

meters, one for the Main receiver and one for the Sub. The meter faces are back-illuminated using a cool blue color with a brightness control. There are separate calibration adjustments for Main and Sub. The provided cable connects to the rig and the radio menu lets you select functions for each meter. The DM-7800 and the virtual meters on the radio can work together; for example, you can display SWR on the radio's meter and power output on the DM-7800. On receive, the S-metering reading is shown. Seven individual scales: S-Meter, Id, Po, SWR, Comp, Vd, ALC. Cable length 3 feet. Requires 12 VDC at 100mA for backlighting. **HRO Price \$179.95**

## Baluns and Cables



**RBA-4**

RBA-4:1  
RBA-1:1  
Y-ACC  
Icom-IC1  
Icom-IC2

Remote 4:1 Balun  
Remote 1:1 Balun  
FT-897, FT-857 Interface  
Icom Interface 10 foot  
Icom Interface 1 foot

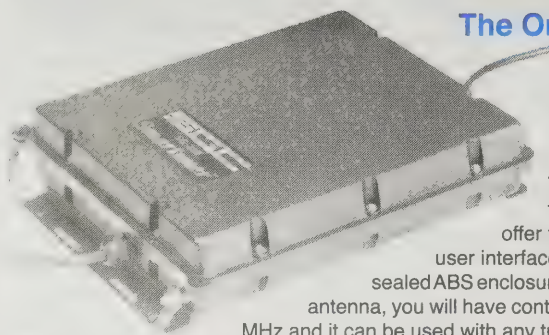
**HRO Price \$30  
HRO Price \$30  
HRO Price \$12  
HRO Price \$20  
HRO Price \$8**





# ANTENNA TUNERS PLUS

Smartuners™ deliver greater impedance matching, more tuning steps and more antenna choices than any other antenna coupler on the market. For frequency agility and precision tuning, choose a Smartuner. They are independently intelligent, matching ANY HF transceiver and ANY antenna. Smartuners are microprocessor controlled; analyzing the conditions of your antenna and automatically adjusting for the best match. They also remember each match, cutting retuning time to under 10 milliseconds when changing frequencies. Smartuners are available for power levels from 1.5 to 500 Watts and frequency ranges from 1.0 to 60 MHz. They provide all-purpose tuning ideal for base, mobile, portable, marine or aviation. Any budget, any installation... Your choice for antenna tuning should be an SGC Smartuner.



## The Original Smartuner™

**SG-230 — \$499.95**  
HRO Price

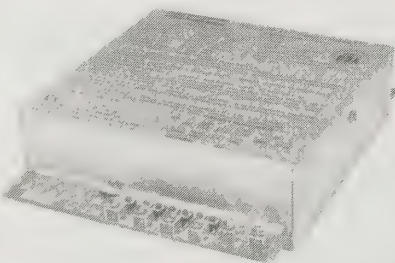
The SG-230 Smartuner was the first product in the HF market to offer fast, flexible tuning without any user interface. It is built in a rugged, factory sealed ABS enclosure. With this tuner and any single antenna, you will have continuous coverage from 1.8 to 30

MHz and it can be used with any transceiver you'll ever own. The SG-230 can be used in base station, mobile, marine and aviation applications, and has been the "Gold Standard" of automatic antenna tuning for more than a decade.

## The Budget Smartuner™

**SG-239 — \$195.95**

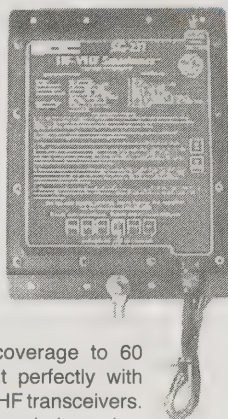
Get quality performance from a low cost package. The SG-239 will operate from 1.8 to 30 MHz with 1.5 to 200 W. Like all Smartuners, it gives you the most flexibility because it will work with any antenna and any transceiver. It also has push buttons for a manual tune option. It weighs only 2 pounds, so you can use it for base or portable.



## The General Purpose Smartuner™

**SG-237 — \$359.95**

The SG-237 is the most popular Smartuner. Its rugged construction and small size allow for maximum flexibility. It has a 100 W power rating and expanded coverage to 60 MHz, matching it perfectly with the most popular HF transceivers. It will work with any balanced or unbalanced antenna including whips, backstays, dipoles, loops and long wires.



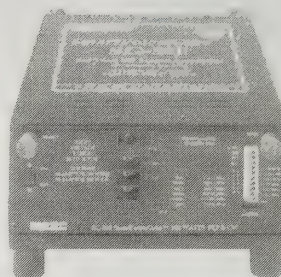
## SGC Smartuners

Specifications	SG-230	SG-235	SG237	SG-239	MAC-200
PEP Input (W)	3-200	3-500	3-100	1.5-200	1.5-200
CW Max Input (W)	80	200	40	80	80
Frequency (MHz)	1.8-30	1.8-30	1.8-60	1.8-30	1.8-60
Input Current (A)	0.9	1.4	0.3	0.23	0.23
DC Input (VDC)	13.6	13.6	13.6	13.6	13.6
Tuning Combinations	0.5 million	0.5 million	0.5 million	1/8 million	1/8 million
Antenna Length (<3.3MHz)	8 ft	50 ft	8 ft	40 ft	40 ft
Antenna Length (>3.3MHz)	23 ft	300 ft	28 ft	100 ft	100 ft
Dimensions (in)	16x12x3	16x12x3	7x6x1.5	7.5x6x2	8.5x6.5x3
Weight (lbs)	8	8	2	2	5
Waterproof	yes	yes	yes	no	no
HRO Price	\$499.95	\$1,295.95	\$359.95	\$195.95	\$265.95

\* Operates from 4 AA batteries - factory installed

## HF Amplifier

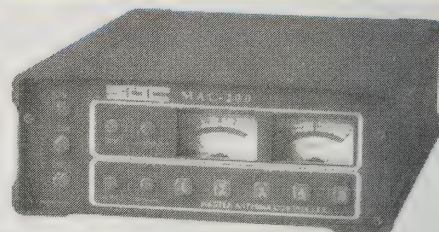
**SG-500**  
**Smart PowerCube™**  
**\$1399.95 — HRO Price**



For 500 Watt operation in your base station or mobile, the SG-500 SmartPower Cube™ provides maximum reliability and unattended operation. The SG-500 is microprocessor

controlled. It automatically monitors your power needs and selects the correct broadband filter. It also has the most advanced self-protection on the market.

## Master Antenna Controller



**MAC-200 — \$265.95**

Select the right antenna, for the right band, at the right time with the MAC-200. You can select among up to five antennas and tune automatically to minimum SWR. Monitor your power and SWR with meters on the front panel. The MAC-200 automatically selects the correct antenna for your operating frequency, quickly and accurately. It stores the correct settings in memory and will recall them in less than ten milliseconds.

## Whip Antennas

**500 W SG-303 — \$CALL**  
**100 W SG-307 — \$CALL**

Hellically wound whip antennas can be used with SGC and other couplers. SG-307 (55-28 & 55-69), up to 100 W, 1.8-60 MHz, 7 feet. SG-303 (55-27 & 55-67), up to 500 W, 1.8-30 MHz, 9 feet (2 sections). Both antennas can be supplied with or without a stainless steel swivel ratchet mount (55-75).





## Multi-band HF Verticals

### HF9V

More efficient than conventional trapped designs or "halfwave" verticals, the exclusive Butternut Differential Reactance Tuning system allows more of the antenna to be active on each band, for greater bandwidth, lower radiation angle, and superior performance!

- 9 bands, 80 thru 6 meters.
- No-radial operation with CPK counterpoise.
- Highly efficient 26 foot vertical radiator.

**HRO Price \$399.95**

### HF2V →

Are you ready for the sunspot shortage when the action will be on 80 and 40? Be prepared with the HF2V. The entire antenna radiates on both bands for low radiation angle and maximum performance.

- Dual-band optimized for 80 and 40 meters.
- 32 feet tall; no guying required.
- 160 or 30 meters with optional adapters.

**HRO Price \$269.95**

### ← HF6V

Work the 6 most popular bands—80, 40, 30, 20, 15 & 10 meters—with a single, highly efficient vertical radiator only 26 feet tall!

- No radial operation with CPK counterpoise.
- Add 160, 17 & 12, or 6 meters with optional adapters.

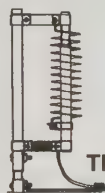
**HRO Price \$349.95**



### HF5B

Five popular bands in a single light-weight 2 element beam antenna. Ideal where space is limited, the HF5B provides up to 3 dBd on 20, up to 5 dBd on 15, 12, and 10. Light enough to turn with a TV rotator, the HF5B has a 6 foot boom and a wingspan of only 12.5 feet. Weighs only 20 pounds; surface area is 3 square feet.

**HRO Price \$399.95**



## Vertical Antenna Accessories

### TBR-160S

**TBR-160S** 160 Meter kit for HF9V-X, HF2V or HF6V-X. Not recommended for CPK.

**HRO Price \$149.95**

**CPK** Counterpoise kit for HF9V-X, HF6V-X. Allows operation with no radial system.

**HRO Price \$139.95**

**STR-II** Resonant radial kit for above ground mounting of Butternut verticals.

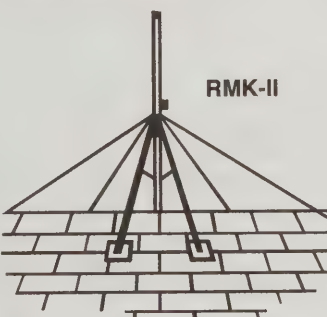
**HRO Price \$129.95**

**A-17-12** Adapter for 17 and 12 meters for 6 band Butternut verticals.

**HRO Price \$65.95**

**RMK-II**-Roof mounting kit. Includes STR-II. **HRO Price \$179.95**

**GPK** Ground Radial Kit. **HRO Price \$75.95**

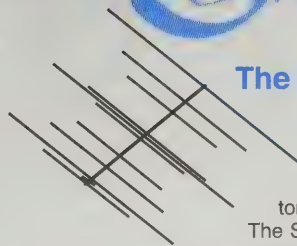


# HF BASE ANTENNAS



## Skyhawk 3X10

**The Next Generation HF Yagi**  
**HRO Price \$1099.95**



The Bencher Skyhawk antenna is a major step forward for serious HF operators. It is not just another trapped tribander.

The Skyhawk features 10 elements on a 23 foot

boom, with three full-sized yagis sharing a common feedline and a common boom. There are three elements on 20 meters, three on 15 meters and four on 10 m. All elements are full-sized with no lossy traps and driven directly.



Special features of the Skyhawk include wide bandwidth, excellent F/B ratios, superb gain, and low weight. With boom and element wind compensators, there is zero rotational mast torque and 90 mph wind survival. All materials are corrosion and UV resistant. Stainless steel blind rivets are used for element assembly.

Custom aluminum extrusions make assembly a snap and assure longevity. A new design of boom to mast bracket makes installation the easiest ever. Heavy wall boom construction means that no boom truss cable is required, making it easier to stack antennas for other bands. A Bencher P5 balun is included.

## Band Specifications

The wind load is 8.5 sq. ft, turning radius 22 feet, wind survival is 90 mph with no ice, 2" boom, 50 ohm impedance and a maximum power rating of 5KW.

Band	Effective Boom Length	VSWR	F/B	Gain
20	23	<1.4:1	>20 dB	>7 dBi
15	15'6"	<1.3:1	>16 dB	>7 dBi
10	16'9"	<1.6:1	>14 dB	>7.7 dBi

## Cobra Antenna

### UltraLite Senior

**160-10 Meters, 140 feet**  
**HRO Price \$89.95**

### UltraLite Junior

**80-10 Meters, 73 feet**  
**HRO Price \$85.95**

On its primary and harmonic operating frequencies, the Cobra antenna works identically to a ladder-line fed doublet, but its unique close-spaced multi-wire element also introduces two added resonant responses below the antenna's fundamental operating frequency. These responses extend frequency coverage far beyond that of a conventional doublet or G5RV. For example, the 140-foot (80-meter) Cobra also resonates near 2.8 MHz and on 160 meters. Similarly, the 73-foot (40-meter) Cobra also covers 60 and 75 Meters.

UltraLite Cobras are designed and engineered to survive harsh winter climates. Weighing only four pounds including the feedline, they install quickly and pull up higher with far less stress on tree branches and support lines. The black marine-grade ABS insulators won't deteriorate in sun or fracture in cold. All hardware is stainless. All wire is uV stable and pull-tested for strength. UltraLites come pre-assembled and ready to install with 100-feet of rugged copper-weld ladder line attached.

All Cobras require a tuner. In most installations, the auto-tuner built into your transceiver should provide sufficient tuning range. Because the Cobra presents a balanced load, we recommend installing a 4:1 current-style balun at the station end of the feedline (many external tuners provide a built-in balun).





## Challenger

The Challenger antenna is the first production multiband utilizing GAP technology. It is capable of operating on eight separate bands from 3.5 MHz to 144 MHz. Use it on 80, 40, 20, 15, 12, 10, 6 and 2 meter bands with over 130 kHz bandwidth on 80 m. The antenna is designed to be mounted directly in the ground or elevated. A ground mount is provided with each antenna. The Challenger may be roof mounted. The antenna requires a counter poise of three 25 foot insulated wires.



## Eagle DX

Gap's smallest antenna, the Eagle DX, weighs just 11 pounds and can be installed most anywhere. It is essentially a set of vertical dipoles. No traps, coils or transformers are used. It covers 40, 20, 17, 15 and 20 meters with the entire band at a VSWR of 2:1 or less. For 10 m this is 500 kHz. No antenna tuner is required.



## Voyager DX

The Voyager DX is the first antenna manufactured specifically to provide efficient low band operation from the typical backyard without a huge investment in time, money, and space. It is not another "add a kit" antenna for 160m. GAP technology opens up the low bands. Emphasis was given to 160 m and 80 m when designing the Voyager. The antenna employs a capacity hat with circular ring to reduce the physical height to 45 feet while maintaining an electrical height of 66 feet. Parallel tuner rods are used in its design. No tuning or matching are required to put the Voyager on the air.



## Wireless Antennas



### ELK 2m / 440 Dual Band

The Elk 2m / 440 is a dual band log periodic antenna for 144-148 MHz and 440-450 MHz. The antenna features 6.6 dBd gain on 2 meters and 7 dBd on 440 MHz. The SWR is 1:1 in these frequency ranges. The antenna handles 200 watts on 2 meters and 100 watts on 440 MHz. The boom length is 24 inches and the antenna weighs only 1.4 pounds.



The ELK 2m/440 assembles quickly with color coded threaded elements that screw into the color coded boom. Access two bands with just one coax fitting. No duplexer is required. All of the band may be used without retuning. Easily change the polarity of the antenna by twisting the mounting assembly.  
**HRO Price \$89.95**

## Wireless Antennas

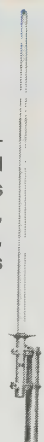
### Wi-Fi / 802.11b Wireless LAN Antennas

NGC offers a wide selection of directional and omnidirectional antennas for Amateur Television, the ISM band, LAN/WAN, data links and wireless internet.



#### GP-24

ATV/ISM Band  
2400-2500 MHz  
Omnidirectional  
Gain: 15.4 dBi  
Height: 5' 10"



Connector:  
N-Type

**HRO Price:**  
**\$199.95**

#### GP-24-3

Same as GP-24 but omnidirectional with 3 degree electrical downtilt.

**HRO Price: \$CALL**

## GAP Antennas

Model	Bands	Bandwidth (under 2:1)	Height (ft)	Weight (lbs)	Mount	Counter poise	Ground Area Required	HRO Price*
Challenger	80, 40, 20, 15, 12, 10, 6, 2m	Entire band except 130kHz 80m	31.5	18	Ground or elevated. Ground Mt supplied	3 at 25'	10' x 12'	\$299.95
Voyager DX	160, 80, 40 20m	Entire band except 900kHz 160m	45	30	Ground. Aluminum pivot and guy brackets supplied	3 at 57'	4 guy points 25 ft from base	\$439.95
Eagle DX	40, 20, 17, 15, 12, 10m	Entire band except 500 kHz 10m	21	11	Most anywhere. Pole mount supplied for 1.25 ant Mast	3 rigid at 80" long		\$329.95

\* All GAP antennas shipped PLUS freight

# BASE ANTENNAS

## RadiWarz

Product	Model	HRO Price
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### G5RV Line

G5RV Jr.	g5jr	\$25.99
G5RV Lite	g5lt	40.99
G5RV	g5rv	36.99
G5RV CL	g4rvcl	45.00
G5RV MAX	g5rvmax	65.99

### Dipoles with 1:1 Balun

160 m	160dp11	75.99
80 m	80dp11	55.99
40 m	40dp11	45.99
20 m	20dp11	37.99
10 m	10dp11	33.99

### Dipoles without Balun

160 m	160dp	70.99
80 m	80dp	50.99
40 m	40dp	40.99
20 m	20dp	32.99
10 m	10dp	32.99

### Double Bazooka

160 m	160dbx	125.00
80m	80dbz	95.00
75 m	75dbz	75.00
60 m	60 dbz	70.00
40 m	40 dbz	50.00
30 m	30dbz	50.00
20 m	20 dbz	37.00
17 m	17 dbz	35.00
15 m	15 dbz	35.00
12 m	12dbz	35.00
11 m	11 dbz	35.00
10 m	10dbz	35.00
6 m	6 dbz	35.00
2 m	2dbz	35.00
220b	220dbz	35.00
440b	440dbz	35.00

### DX Loop

160 m	160lp	175.00
80 m	80lp	125.00
40 m	40lp	75.00
20 m	20lp	55.00
11 m	11lp	45.00
6 m	6lp	45.00
2 m	2lp	40.00

### DX (OCF) Windom

DX 40	dx40	55.00
DX 80	dx80	75.00
DX 169	dx16040m	125.00

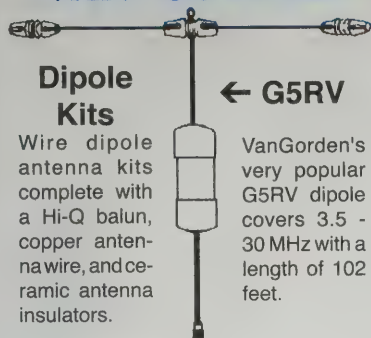
### Baluns

1:1 Air	b11a	23.95
1:1 Ferrite	b11f	29.95
1:1 Isolation	b11i	29.95
1:4 Voltage Air	b14va	27.95
1:4 Voltage Ferrite	b14vf	29.95
1:4 Current Air	b14ca	27.95
1:4 Current Ferrite	b14cf	29.95
1:6 Current Isolation	b16ci	37.95
1:9 Balun Isolation TX	b19tx	37.95
1:12 Balun ISO XMA2	b112tx	45.99



# HF BASE ANTENNAS

## VAN GORDEN



### Dipole Kits

Wire dipole antenna kits complete with a Hi-Q balun, copper antenna wire, and ceramic antenna insulators.

VanGorden's very popular G5RV dipole covers 3.5 - 30 MHz with a length of 102 feet.

### Standard Length

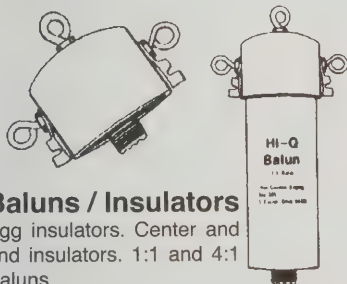
Models D-10 for 10 meters, D-15 for 15 m, D-20 for 20 m, D-40 for 40 m, and D-80 for 75 / 80 m.

### Shortened

Models SD-40 for 40 m and SD-80 for 75 / 80 m.

### Parallel

These models are made of multiple dipoles connected at the center balun and fed at this one point. Model PD-8010 is for 10-80 meters, PD-8040 is for 40 and 80 m, PD-4010 is for 10-40 m, and PD-4020 is for 20-40 m.



### Baluns / Insulators

Egg insulators. Center and end insulators. 1:1 and 4:1 Baluns.

### Van Gorden Antennas

Model	Type	Band	Length ft (m)	Power PEP	Wire Size	HRO Price
D-10	Standard Dipole	10	16(4.9)	2KW	#14	\$34.95
D-15	Standard Dipole	15	22(6.7)	2KW	#14	\$35.95
D-20	Standard Dipole	20	33 (9.9)	2KW	#14	\$36.95
D-40	Standard Dipole	15/40	66 (19.8)	2KW	#14	\$38.95
D-80	Standard Dipole	75/80	130 (39)	2KW	#14	\$41.95
All-Bander	Standard Dipole	160-10 *	134 (40.8)	2KW	#14	\$35.95
Shorty	Dipole	160-10 *	70(21)	2KW	#14	\$55.95
SD-40	Shortened Dipole	40	45 (13.5)	2KW	#14	\$44.95
SD-80	Shortened Dipole	75/80	90 (27)	2KW	#14	\$46.95
PD-8010	Parallel Dipole	10 to 80	130 (39)	2KW	#14	\$55.95
PD-8040	Parallel Dipole	15/40/80	130 (39)	2KW	#14	\$51.95
PD-4010	Parallel Dipole	10/20/15/40	66 (19.8)	2KW	#14	\$49.95
PD-4020	Parallel Dipole	20, 15/40	66 (19.8)	2KW	#14	\$43.95
G5RV	Dipole	3.5-30 MHz	102(31)	2KW	#14	\$59.95

\* Antenna tuner required



### Classic Tribanders C Series

Force 12 has a fine lineup of antennas covering the 20-15-10 bands with a single feedline. All are trapless and are acclaimed as outperforming trapped antennas.

- C-3 20-10 m, 18' boom.
- C-3S 20-10 m, 12' boom.
- C-3SL 20-15-10 m (3-element 20, 3-element 15, 4-element 10, w/ separate feed-lines for maximum versatility).
- C-4 40-10 m, 18' boom.
- C-4S 40-10 m, 12' boom.
- C-4XL 40-10 m, 30' boom (with 2 elements on 40).
- C-4SXL 40-10 m, 23' boom (with 2 elements on 40).

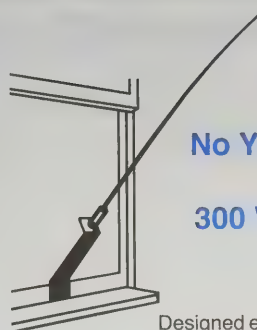
Call HRO for Quotes



### HF Dipole Antenna

YA-30 — \$249.95 — HRO Price

This 83-foot broadband dipole antenna provides optimum performance over 1.8-30 MHz. Usual requirements for an antenna tuner between the rig and antenna are eliminated by the unique broadband design. Handles 150 watts at an SWR of less than 1.9:1 on the amateur bands. Preassembled and pretuned. Can be installed as a horizontal flat-top, inverted-V, or sloper. 100 feet of RG-8X with PL-259 included.



### No Yard? Deed Restricted? NO PROBLEM!

### 300 Watt Portable Antenna for 2-40 Meters

#### AP-10B

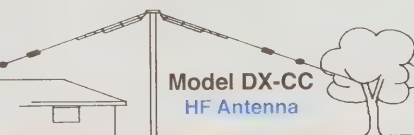
Designed especially for people who cannot erect a permanent antenna. Easily tunes any frequency from 10-40 meters. Also operates on 2 and 6 meters. Mounts to a window, table, balcony, etc. Base loaded unit includes telescopic whip, window mount bracket, single coil with flylead/clip, insulated counterpoise wire, 10 ft of coax, hardware. Stainless steel whip collapses to 23" for easy transport. **HRO Price \$84.95**



### Broadband Folded Dipoles

Barker & Williamson's unique patented design brings you true continuous coverage of 1.8 - 30 MHz in an antenna only 90 feet in length! The SWR on these very low noise dipoles is less than 2:1 from 1.8-30 MHz and 3:1 on 6 m (tuner required). Install as flat, inverted vee, or sloper. Antennas come completely assembled. They are constructed of #14 stranded wire, copperweld. 2KW PEP SSB / CW ICAS. 50 Ohm input with SO-239.

Model	MHz	Feet	Wire	HRO Price
BWD-20	14-30	20	Copperweld	\$269.95
BWD-45	7-30	45	Copperweld	\$269.95
BWD-65	4-30	65	Copperweld	\$279.95
BWD-90	1.8-30	90	Copperweld	\$279.95



### HF Antennas for Limited Space

All the limited space antennas use stainless steel hardware where required, are fully assembled, and are manufactured to withstand severe weather. SO-239 connectors.

**Model DX-B** is a single wire, high performance quarter-wave sloper antenna for 160, 80, 40 & 30 meters. For limited space, the antenna requires only 60 feet for installation. Use with a wide range antenna tuner. Pre-assembled and pre-tuned. Has stainless steel hardware, 12 gauge insulated solid copper wire and the Alpha Delta "ISO-RES" RF choke coils, 50 ohm coax feed. Full legal power. **HRO Price \$110.95**

**Model DX-A:** A quarter wave twin sloper for 160-80-40 meters. One leg is 67' and the other 55'. Installs as an inverted-V. **HRO Price \$99.95**

**Model DX-CC:** A no trap 80-40-20-15-10 meter dipole. 82' long. **HRO Price \$159.95**

**Model DX-DD:** A no trap 80-40 meter dipole. 82' long. **HRO Price \$130.95**

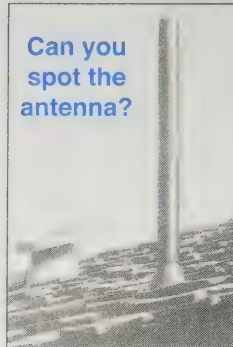
**Model DX-EE:** A no trap 40-20-15-10 meter dipole. Only 40' long. **HRO Price \$140.95**

**Model DX-OCF:** Off-center fed 6-band antenna (75 / 80, 40, 20, 17, 12 & 10 M). No tuner required. Feed with 50 ohm coax to a 6:1 balun with SO-239 connector. Install in standard 135' configuration or in 67' (40, 10, 10 M). Constructed of 65 strand 12 gauge PVC coated wire. 300 W CW / SSB **HRO Price \$175.95**



# AMATEUR BASE & PORTABLE ANTENNAS

## Ventenna™ Company



Neither can your neighbors.

At last a solution to antenna restrictions! The Ventenna™ quickly slips over an existing vent pipe and your signal really gets out! This nearly invisible antenna is one of the most rugged made.

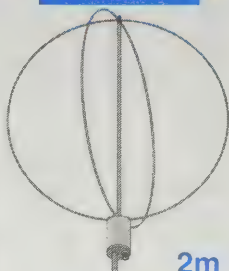
The VT-27 dual-band is for 2m/440 MHz. Single band models are for 2 m, 220 MHz and 440 MHz.

Model	Bands	HRO Price
VT-14	2 meters	\$63.95
VT-22	220 MHz	\$63.95
VT-44	440 MHz	\$63.95
VT-27	2 meter & 440 MHz	\$89.95

### Portable HF Vertical Antenna

HfP — \$139.95  
HRO Price

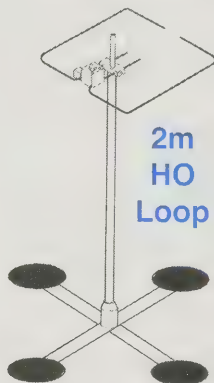
The HfP portable HF vertical antenna covers 6.5 MHz to 30 MHz. (An 80m option will soon be available). It handles 200 watts and is 10.5 feet when fully assembled. The package weighs 2.2 pounds. Typical band width without adjustment is 200 kHz on 40 m, 400 kHz on 20 m, greater than 1 MHz on 10 m, and the full band on 30m, 17m, 15m and 12 m. The antenna includes elements for all bands, mounting base, ground radials on easy-to-use spools, and guy cable on an easy-to-use spool.



### 2m Eggbeater

EB-144 / RK2M  
HRO Price \$CALL

Use the Egg-beater for fixed and mobile operations. It produces smooth omnidirectional horizontal polarity at the horizon. Above the horizon, the pattern transforms to right hand circular off the top making it a natural for OSCAR use. No rotation or steering is required.



### 2m HO Loop

Shown with optional mag mount

HRO Price \$CALL  
Colored versions higher

Nothing satisfies more than our 2m "HO" Loop for horizontal performance. This easily adjustable antenna has plenty of bandwidth. It will handle a KW plus. Stack antennas for more gain. The Loop has durable construction for "tree bashers." Have no weather worries with the bright aluminum standard finish or an anodized finish in gold, black, turquoise or green.



## High Sierra

### This Platinum Package Deal has the best of High Sierra Antennas.

Suggested List Price \$630.  
HRO Price \$545.95

- The famous HS-1800 / Pro in powder coated black. Continuous tuning from 3.5 to 30 MHz. Rated at 1000 watts. Weighs 6 pounds. Approximately 3 feet tall when fully retracted. Used at home or mobile.
- Stainless steel mounting bracket powder coated black has the coax connector and ground connection.
- Stainless steel 6 foot whip powder coated black.
- Cinch quick disconnect powder coated black.
- Installation kit including 20 feet of High Sierra coax with the motor wires, coax connectors, ground strap and connector seal.
- EZ-Tune controllers available for Icom, Kenwood & Yaesu transceivers.
- Standard remote control box.

### Sidekick

HRO Price \$395.95

The Sidekick Antenna covers almost all of the HF spectrum. Its small size and high-Q coil provide an efficient, remotely tuned HF antenna.

- Just 15 inches tall, it has continuous tuning from 3.7 to 60 MHz with an SWR of less than 1.5:1. It weighs about 2 pounds and is rated at 200 watts. Standard 3/8-24 threaded base to use with many types of mounts. Easy to install and use at home, mobile or camping.
- Standard remote control box included.
- Stainless steel 3 foot whip powder coated black included.
- EZ-Tune controllers for semi-automatic tuning with Icom, Kenwood & Yaesu transceivers available.

### Tripod Deluxe

Perfect for camping, portable, emergency, or backyard use. Approx. 6 ft tall. Has a 3/8-24 stainless mount with coax connector for use with most mobile antennas. Comes complete with a counterpoise that has eight 10-foot wires. Sets up in just seconds. Weighs only 4.5 pounds. Black powder coated aluminum tubing. Package includes a strong nylon carrying / storage bag. HRO Price \$130.95

## SUPERANTENNAS

by Vern W6MMA

Multi-band HF screwdriver—portable antennas fit into your briefcase along with a K2, FT-817 or other small rig. The universal mount allows them to be set up on almost any object at any angle to operate QRP to 150 watts.

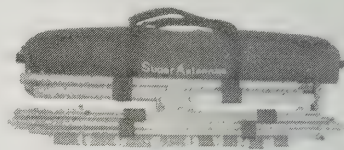
### Portable HF Antenna

7 MHz - 450 MHz  
3.5-4 MHz with optional coil  
MP-1: \$99.95  
HRO Price

#### Accessories:

80 Meter Coil	\$25.00
Tripod	\$19.95
Mobile Kit	\$15.00
FT-817 Bracket	\$19.95
Mobile Kit	\$15.00

(Shown with universal Mounting Bracket Assembly)



### QRP Field Yagi

6 / 10 / 12 / 17 / 20 m Yagi  
YP-2: \$359.95  
HRO Price

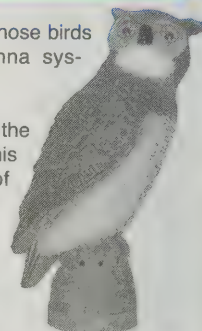
The 2-element, driver-reflector QRP Field Yagi covers 10 and 6 meters with full length, widely-spaced elements for very wide band coverage. On 12 and 15 meters, the elements are loaded at specific points with 3.5 pH coils with an estimated Q of 200. On 17 and 20 meters, the elements are loaded at specific points with 7.0 pH coils, again with an estimated Q of 200. The antenna will fit into the side-to-side space of a 10-meter Yagi. It is light weight and fits into a 36" long carrying case for easy transport. It requires no matching network.

### The Owl

Want to keep those birds off your antenna system?

The OWL is just the trick. Mount this fella on top of your tower and the birds will stay away.

HRO Price  
\$19.95





## Cushcraft HF Antennas

# ANTENNAS

Model	Bands	Ele	Fwd Gain dBi	Max F/B dB	Min SWR	Boom Length		Boom Diameter		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight	
						FT	M	IN	CM	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg
MA-5B	10 12 15 17 20 meters	3	5.3 10m 1.0 12 m 4.8 15m 1.0 17m 3.6 20m	22	1.2:1	7.3	2.2	1.5	3.8	17.5	5.3	8.8	2.7	1 1/2	3.8	3.22	0.3	26.5	12
MA-5V	10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95
MA-6V	6, 10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95
R6000	20 - 10 + 6 meters	1	3		<1.2:1					19	8.7			1 3/4	4.4	1.5	0.14	12.5	5.6
R8	40 30 20 17 15 12 10 6m	1	3		<1.3:1					28	7.3							23	10.5
A3S	20 15 10 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	27.8	8.5	15.5	4.7	2	5.1	4.4	0.41	30	13.6
A743 Kit	40m for A3				<1.2:1					35	10.7	15.5	4.7	2	5.1	0.06	0.06	7	3.2
A3WS	17 12 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	25	7.6	14.4	4.4	2	5.1	4.1	0.38	26.5	12
A103 Kit	30m for A3WS				<1.2:1					32	9.8	14.4	4.4	2	5.1	0.04	0.04	6	2.7
A4S	20 15 10 meters	4	8.9	25	<1.2:1	18	5.5	2	5.1	32	9.8	18.4	5.6	2	5.1	5.5	0.51	38	17.2
A744 Kit	40m for A4S				<1.2:1					35	10.7	18.4	5.6	2	5.1	0.3	0.03	7.5	3.4
TEN-3	10 meters	3	8	25	<1.2:1	8	2.4	1.4	3.5	18	5.5	9.8	3	2	5.1	2	0.19	10.5	4.8
XM240	40 meters	2	6	25	1.1:1	22	6.7	2.5	6.3	43	13.1	24.3	7.4	2.5	6.35	5.5	0.51	59	26.8
D3	20 15 10 meters	1			<1.2:1					26	7.9	4	1.2	2	5.1	0.9	0.08	11	5
D3W	17 12 meters	1			<1.2:1					34	10.4	5	1.5	2	5.1	0.9	0.08	13	5.9
D4	40 20 15 10 meters	1			<1.2:1					36	11	5.5	1.7	2	5.1	1.3	0.12	15.5	7
D40	40 meters	1			<1.2:1					42	12.8	6.5	2	2	5.1	1.7	0.16	15	6.8
AR-10	10 meters	1	3		<1.2:1					17.6	5.4			1 1/4	3.2	1 2/3	0.16	5	2.3
MA8040V	80/40 meters	1	0 80m 2 40m		1.1:1					22	6.7							8.8	4

*Due to rapidly increasing raw material and transportation costs, call for availability and pricing.*

## Cushcraft VHF / UHF Antennas

Model	Frequency Coverage	Ele	FWD Gain dBi	Max F/B dB	Conn	Polarization		Boom Length		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight	
						Horz	Vert	FT	M	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg
124-WB	144-148	4	10.2	24	U	Y	Y	4	1.2	3.4	1	4	1.2	2	5.1	0.34	0.03	3.5	1.6
13B2	144-148	13	15.8	26	U	Y	Y	15	4.6	3.4	1	8.9	2.7	2	5.1	1.8	0.17	9.5	4.3
17B2	144-145	17	18	26	N	Y	N	31	9.4	3.4	1	17.3	5.3	2	5.1	3.9	0.36	18	8.2
224-WB	222-225	4	10.2	24	U	Y	Y	3	0.09	2.2	0.7	3	0.9	2	5.1	0.23	0.02	2.5	1.1
A50-3S	50-54	3	8	20	U	Y	N	6	1.8	9.8	3	6	1.8	2	5.1	1.8	0.17	8.5	3.9
A50-5S	50-54	5	10.5	24	U	Y	N	12	3.7	9.8	3	7.5	2.3	2	5.1	2.7	0.25	13	5.9
A50-6S	50-54	6	11.6	26	U	Y	N	20	6.1	9.8	3	11	3.4	2	5.1	4.5	0.42	22	10
A148-3S	144-148	3	7.8	25	U	Y	Y	2.8	0.9	3.3	1	2.8	0.9	2	5.1	0.27	0.03	3	1.4
A148-10S	144-148	10	13.2	24	U	Y	Y	12	3.7	3.3	1	6	1.8	2	5.1	1.2	0.11	6	2.7
A148-20T	144-148	20	13	20	U	Y	Y	10.8	3.3	3.3	1	6.8	2.1	1.5	3.8	1.4	0.13	7.5	3.4
A449-6S	440-450	6	10.5	18	U	Y	Y	2.9	0.09	1.1	0.3	2.9	0.9	2	5.1	0.3	0.03	2.5	1.1
A430-11S	430-440	11		20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6
A449-11S	440-450	11	13.2	20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6
AR270	144-148	1	3		U		Y			3.75	1.13			2	5.1	0.27	0.03	2	0.9
	430-450	1	5.5		U		Y												
AR270B	144-148	1	5.5		U		Y			7.7	2.3			2	5.1	0.47	0.044	2.4	1.09
	430-450	1	7.5		U		Y												
A270-6S	144-148	3	7.8	20	U	Y	Y	2.8	0.09	3.4	1	2.8	0.9	2	5.1	0.3	0.03	3.5	1.6
	430-450	3	7.8	18	U														
A270-10S	144-148	5	10	20	U	Y	Y	6.2	1.9	3.4	1	6.2	1.9	2	5.1	0.73	0.07	5	2.3
	440-450	5	10	18	U														
A627013S	6m,2m,70cm	5	8 6m 10 2m 10 70cm	20	U	Y	Y	8.8	2.56	9.7	3	6.16	1.87	2	5.1	2.52	0.23	9.5	4.3
AR-6	50-54		3		U	N	Y			10.1	3.1			1.25	3.2	0.37	0.03	4	1.8
AR-2	135-160		3		U	N	Y			3.9	1.2			1.25	3.2	0.21	0.02	2	0.9
AR-450	440-460		3		U	N	Y			1.4	0.42			0.75	0.88	0.1	0.01	2	0.8
ARX-2	137-160				U	N	Y			9.3	2.8			1.25	3.2	0.33	0.03	2.5	1.1
ARX-2B	134-164		7		U	N	Y			14	4.3			1.25	3.2	0.5	0.05	3.5	1.6
ARX-220B	220-225		7		U	N	Y			9.3	2.8			1.25	3.2	0.3	0.03	3	1.4
ARX-450B	435-450		7		U	N	Y			5	1.5			1	1.5	0.2	0.02	2	0.9





Hustler delivers reliability and performance **Beyond Your Expectations!**

## VHF / UHF Base Antennas

### 2m Verticals

These easy-to-assemble verticals are made of aluminum and high-strength fiberglass. When disassembled the longest part is about 4'. Choose 3, 6, or 7 dB gain and the overall length that best suits your application.

G7- 144

#### G7-144

HRO Price \$199.95

- Frequency range: 144-148 MHz.
- Bandwidth: 4 MHz.
- Gain: 7 dB.

#### G6-144B

HRO Price \$139.95

- Frequency range: 143-149 MHz.
- Bandwidth: 6 MHz.
- Gain: 6 dB.

#### G3-144

HRO Price \$69.95

- Freq. Range: 144-148 MHz
- Bandwidth: 4 MHz.
- Gain: 3dB.

### 220 & 440 Verticals

#### G7-220

HRO Price \$155.95

The G7-220 is of similar design and construction as the G7-144.

- Freq. Range: 220-225 MHz.
- Bandwidth: 5 MHz.
- Construction: High strength fiberglass and aluminum.
- Gain: 7 dB.

#### G6-440

HRO Price \$169.95

The G6-440 is of similar design and construction as the G6-270R.

- Frequency range: 440-450 MHz.
- Bandwidth: 10 MHz.
- Construction: One piece radome.
- Gain: 6 dB.

### Repeater Antennas

#### The Spirit Series

Hustler's omnidirectional, collinear design base station antennas are enclosed in a rugged fiberglass radome that will help minimize pattern variations due to high winds or extreme conditions. Models are available for 144, 220, 440, 900 MHz, and 1.2 GHz. The gain will be unity, 3, 6, 9, or 12 dB depending on the frequency.

Call HRO for quotes on custom frequencies.

### 2m / 440 MHz Dual Band

#### G6-270R Dual band 2 m / 70 cm

HRO Price \$199.95

The G6-270R is a combination G6-144B and G6-440. It is factory tuned for quick and easy installation.

- Frequency range: 144-148 MHz / 435-445 MHz.
- Gain: 6 dB.
- Bandwidth: 4 MHz - 2 m / 10 MHz - 70cm.
- One piece radome.
- VSWR: < 1.5:1 @ resonance.

## HF Base Antennas

### HF Multi-band

#### 6-BTV

10, 15, 20, 30, 40, 75/80 m

HRO Price \$219.95

#### 5-BTV

10, 15, 20, 40, 75/80 m

HRO Price \$199.95

#### 4-BTV

10, 15, 20, 40 m

HRO Price \$169.95

- Broadbanded, low VSWR at band edges.
- Power capability - full legal limit on SSB or CW.
- Solid one-inch fiberglass trap forms for optimum electrical and mechanical stability.
- Heavy wall, high strength aluminum tubing, heavy duty aluminum mounting bracket and low loss, high strength insulators.
- Stainless steel clamps and hardware.
- Easy assembly and tuning.
- Single line feed with any length of 50 ohm coax used as ground mount with or without radials, or elevated mount with radials.
- All the BTV's can be mounted in a piece of PVC and disguised as a flagpole in deed restricted neighborhoods.



5-BTV

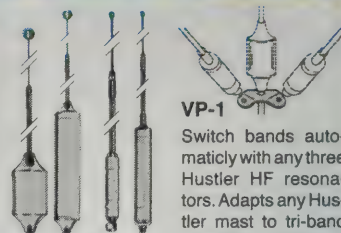
#### Model 30-MTK

30 meter add on kit for the 4 and 5-BTV

# BASE ANTENNAS

## HF Resonators

Customize your HF mobile system with Hustler products. Resonators may be used separately on one of the masts or up to three at a time with the VP-1. Add the QD-2, springs and mounts as needed for your installation.



VP-1

Switch bands automatically with any three Hustler HF resonators. Adapts any Hustler mast to tri-band operation. \$6.95

## Hustler HF Resonators

Model	Type	Band	Power SSB	Bandwidth 2:1 SWR	Weight lbs	HRO Price
RM-10	Standard	10 m	400 W	150-250 KHz	0.41	\$18.95
RM-11	Standard	11 m	400 W	150-250 KHz	0.41	\$18.95
RM-12	Standard	12 m	400 W	90-120 KHz	0.41	\$18.95
RM-15	Standard	15 m	400 W	100-150 KHz	0.42	\$18.95
RM-17	Standard	17 m	400 W	120-150 KHz	0.44	\$25.95
RM-20	Standard	20 m	400 W	80-100 KHz	0.46	\$25.95
RM-30	Standard	30 m	400 W	50-60 KHz	0.84	\$28.95
RM-40	Standard	40 m	400 W	40-50 KHz	0.84	\$30.95
RM-60	Standard	60 m	400 W			\$30.95
RM-75	Standard	75 m	400 W	25-30 KHz	1.05	\$30.95
RM-80	Standard	80 m	400 W	25-30 KHz	1.05	\$30.95
RM-10-S	Super	10 m	1 kW	250-400 KHz	1	\$27.95
RM-15-S	Super	15 m	1 kW	150-200 KHz	1.2	\$28.95
RM-20-S	Super	20 m	1 kW	100-150 KHz	1.25	\$32.95
RM-40-S	Super	40 m	1 kW	50-80 KHz	1.8	\$41.95
RM-75-S	Super	75 m	1 kW	50-60 KHz	2.1	\$57.95
RM-80-S	Super	80 m	1 kW	50-60 KHz	2.1	\$57.95

## Hustler Base Antennas

Model	Band	Gain	Connector	Height ft(m)	HRO
G7-144	2m	7 dB	N Female	16.3 (4.6)	\$199.95
G6-144B	2m	6 dB	SO-239	9.8 (2.9)	\$139.95
G3-144	2m	3 dB	SO-239	7.5 (2.3)	\$69.95
G7-220	220 MHz	7 dB	N Female	10.2 (3.0)	\$185.95
G6-440	440 MHz	6 dB	N Female	7.3 (2.2)	\$189.95
G6-270R	2m / 70 cm	6 dB	N Female	7.6 (2.3)	\$199.95
6-BTV	10-30-80 m			24.0 (7.2)	\$219.95
5-BTV	10 to 80 m			25.0 (7.5)	\$199.95
4-BTV	10-40 m			21.4 (8.4)	\$169.95

## Hustler VHF / UHF Mobile Antennas

Model	Band	Gain	Power	Mount	HRO
LMC-270	2m/70 cm	2.4/4	100	NMO	\$34.95
MX-270	2m/70 cm	2.4/4	100	Mag	59.95
LMG-144	2m	3.4	200	NMO	27.95
LMG-440-5	440	5	200	NMO	27.95
LMC-144	2m	3.4	200	NMO	23.95
LMC-440-5	440	5	200	NMO	24.95
LMB-144	2m	3.4	200	NMO	22.95
LMB-440-5	440	5	200	NMO	24.95
BBG-144	2m	3.4	200	NMO	49.95
BBG-440-5	440	5	200	NMO	50.95
BBGT-144	2m	3.4	200	Trunk	52.95
BBGT-440-5	440	5	200	Trunk	55.95
MX-2	2m	3.4	200	Mag	37.95
MX-220	220	3.4	200	Mag	37.95
MX-440	440	5	200	Mag	63.95
MX-2B	2m	3.4	200	Mag	39.95
MX-440B	440	3.4	200	Mag	39.95
SF-2	2m	3.4	100	3/8X24	17.95
SF-220	220	3.4	100	3/8X24	16.95
RX-2	2m	3.4	100	Mag	28.95
RX-220	220	3.4	100	Mag	28.95
RX-440	440	5	100	Mag	28.95
CG-144	2m	5.2	200	3/8X24	36.95
CG-220	220	5.2	200	3/8X24	36.95
CGT-144	2m	5.2	200	Trunk	59.95
CGT-220	220	5.2	200	Trunk	59.95
THF	140-500	Unity	200	Trunk	25.95
UHT-1	140-500	Unity	200	3/4 hole	17.95
UGM	140-500	Unity	25	Mag	23.95



# MOBILE ANTENNAS / MOUNTS

## VHF / UHF Mobile Antennas

### Dual Band

Dual band models for 2m / 440 MHz give you 2.4 dB / 4 dB gain. The antennas are rated at 100 Watts.

#### LMC-270

- NMO style coil
- Chrome top
- Coil and whip only

#### MX-270

- Chrome top.
- NMO style magnetic mount.
- 17 ft RG58/U coax.
- PL-259 connector.

### Magnetic Mounts

Models for 2m, 220 and 440 MHz are power rated for 200 Watts. Each has an NMO-style coil and a magnetic mount.

**MX-2** 144 MHz 3.4 dB gain

**MX-220** 220 MHz 5.0 dB gain

**MX-440** 440 MHz 5.0 dB gain

- Chrome top.
- 10 oz magnet.
- 17 ft RG58/U coax.
- PL-259 connector.

**MX-2B** 144 MHz 3.4 dB

**MX-440B** 440 MHz 5.0 dB

- Same as above but all black coil.

### Collinear

Collinear models for 2m and 220 MHz provide 5.2 dB gain. They are power rated for 200 Watts. All have a swivel ball for vertical positioning.

**CG-144** 6 MHz bandwidth

**CG-220** 4 MHz bandwidth

- 3/8"x24 thread
- 5/8 over ~ wave.

**CGT-144** 6 MHz bandwidth

**CGT-220** 4 MHz bandwidth

- Trunk mount base.
- 17 ft RG58/U coax.
- PL-259 connector.

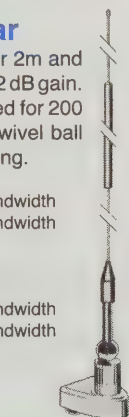
### Unity Gain

An antenna to custom trim as needed for VHF or UHF frequencies. Covers 140-500 MHz.

**THF**  
Trunk Lip Mount

**UHT-1**  
Roof/Deck Mount

**UGM**  
Magnet Mount



### Coil and Whip

Models for 2m or 440 MHz are power rated for 200 Watts. NMO-style coil on each requires an NMO mount.

**LMG-144** 3.4 dB gain

**LMG-440-5** 5.0 dB gain

- Chrome top and bottom.
- Contact- silver plated push pin.

**LMC-144** 3.4 dB gain

**LMC-440-5** 5.0 dB gain

- Black coil with chrome top.

**LMB-144** 3.4 dB gain

**LMB-440-5** 5.0 dB gain

- Black coil.

**BBG-144** 3.4 dB gain

**BBG-440-5** 5.0 dB gain

- Chrome top, swivel ball and spring

**BBGT-144** 3.4 dB gain

**BBGT-440-5** 5.0 dB gain

- Includes trunk mount.
- 17 ft RG58/U coax.
- PL-259 connector.

### 5/8 Wave

Base-loaded 5/8 wave models for 2m, 220 and 440 MHz are power rated for 100 Watts.

**SF-2** 144 MHz 3.4 dB ga

**SF-220** 220 MHz 3.4 dB ga

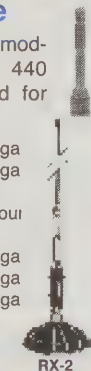
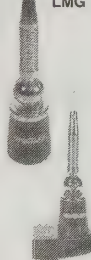
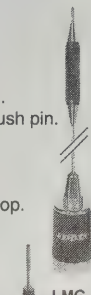
- 3/8" x 24 thread.
- Mount to any Hustler mou

**RX-2** 144 MHz 3.4 dB ga

**RX-220** 220 MHz 3.4 dB ga

**RX-440** 440 MHz 5.0 dB ga

- 3 oz magnetic mount.
- 15 ft RG-58/U coax.
- PL-259 connector.



## Accessories



### MKR-2 Radial Kit

Used to convert RX Series, SF Series, & C6 Series to fix station operation. Contains three radials. Mount can accept any 3/8 x 24 threaded mount.



**QD-2 Quick Disconnect**  
Remove antennas easily with a push and twist release. Compression design of 100% stainless steel. 3/8 x 24 threads. \$19.95

## Mobile Mounts

• **BM-1** Bumper mount with stainless steel strap and 1" diameter ball with 3/8 x 24 threads. \$25.95

• **MBM** Powerful 5" diameter magnet with 3/8 x 24 threads. 16' of RG58U coax with PL-259 connector. \$22.95

• **SSM-1** Heavy duty ball mount with 4" stainless steel spring with copper braided center conductor to prevent detuning. 180 degree adjustable 2" diameter stainless steel ball. Accepts 3/8 x 24 antennas. \$52.95

• **SSM-2** Heavy duty 2" diameter stainless steel ball mount. 180 degree adjustable. Accepts 3/8 x 24 antennas. \$32.95

• **SSM-3** Heavy duty stainless steel 4" spring with 3/8 x 24 coupling stud. Copper braided center conductor to prevent detuning. \$29.95

• **C-32** Chrome plated 1" ball mount. Accepts 3/8 x 24 antennas. \$12.95

• **C-29** Stainless steel 4" spring. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. \$21.95

• **C-30** Chrome plated 4" spring. Copper braided center conductor to prevent detuning. \$14.95

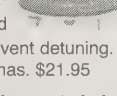
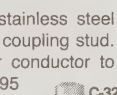
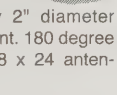
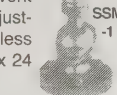
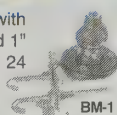
• **RSS-2** Stainless steel 3" spring. Used for mobile antenna between resonator and mast. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. \$13.95

• **HLM** Trunk lip mount designed for hatch and slanted back vehicles. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$25.95

• **HOT** Trunk lip mount with easy off/on with thumb knob. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$26.95

• **TLM** Trunk lip mount which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$24.95

• **RVM** Recreational vehicle mount with heavy duty bracket. Easy antenna removal or lay down with thumb knob. 1" ball accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$23.95



All mounts below are supplied with 17" RG-58U cable.

Model	Description	HRO Price
CHMA	3/8" Hole mount without connector	\$10.95
CHMA-B	3/8" Hole mount w/crimp-on BNC	11.95
CHMA-P	3/8" Hole mount w/crimp-on PL-259	11.95
CHMA-T	3/8" Hole mount w/crimp-on TNC	11.95
CHMA-U	3/8" Hole mount w/crimp-on Mini UHF	11.95
CHMB	3/4" Hole mount without connector	10.95
CHMB-B	3/4" Hole mount w/crimp-on BNC	11.95
CHMB-P	3/4" Hole mount w/crimp-on PL-259	11.95
CHMB-T	3/4" Hole mount w/crimp-on TNC	11.95
CHMB-U	3/4" Hole mount w/crimp-on Mini UHF	11.95
CMMA	NMO 10 oz mag w/solder-on PL-259	17.95
CTMA	Trunk mount without connector	13.95
CTMA-B	Trunk mount w/crimp-On BNC	14.95
CTMA-P	Trunk mount w/crimp-On PL-259	14.95
CTMA-T	Trunk mount w/crimp-On TNC	14.95
CTMA-U	Trunk mount w/crimp-On Mini UHF	14.95

## Mobile Masts

### Fold-Over Masts

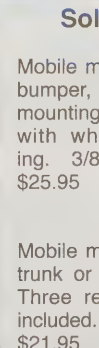
**MO-1**  
Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 15" above base. 3/8 x 24 threaded \$33.95

**MO-2**  
Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 27" above base. 3/8 x 24 threaded \$33.95

### Solid Masts

**MO-3**  
Mobile mast 54" high for bumper, fender or hitch mounting. Solid aluminum with white vinyl coating. 3/8 x 24 threaded \$25.95

**MO-4**  
Mobile mast 22" high for trunk or deck mounting. Three retuning tip rods included. 3/8 x 24 threaded \$21.95





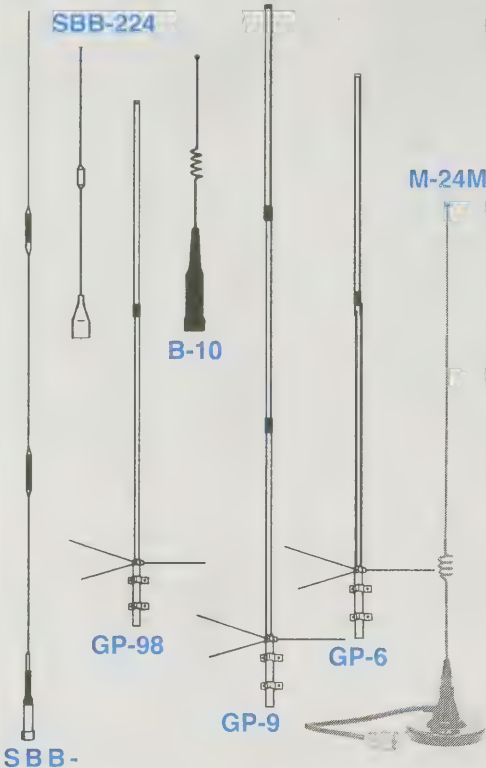


## Comet Dual-Band Antennas

### Dual- & Tri-band VHF / UHF

Comet developed the Super Linear Converter (SLC) to increase actual gain of dual and tri-band antennas.

- A complete pre-formed phasing coil and phosphorus copper element eliminates additional components and gain loss.
- The SLC is electrically very efficient, providing a low angle of radiation, directly to the horizon.
- Comet sectional antennas use ABS (Transparent to RF) connecting joints for the finest pattern and easiest assembly.



### Dual-Band Mag Mount Antenna

Economical black anodized 2m / 440 MHz antenna is 19.5" tall and comes with 13 feet of RG-58/U coax and either a gold-plated PL-259 (Model M-24M) or BNC connector (Model M-24B) soldered on.

Gain: 146 MHz 1.7 dBi 3/8 wave  
446 MHz 4.1 dBi 1/4 + 5/8 wave  
Max Power: 80 Watts  
VSWR: 1.5:1 or less  
Impedance: 50 Ohm  
HRO Price **\$39.95**

### Flexible Dual-Band

Convenient, very flexible 2m / 70 cm 17" antenna. Comes with either a gold-plated PL-259 (Model SBB-1) or NMO connector (Model SBB-1NMO).

Gain: 146 MHz 1.5 dBi 1/4 wave  
446 MHz 2.15 dBi 1/2 wave  
Max Power: 60 Watts  
VSWR: 1.5:1 or less  
HRO Price **\$42.95**

MODEL	BANDS	GAIN	MAX PWR Watts	CONN	WGT Lbs' oz"	LEN FT' In"	MAX Wind Speed MPH	HRO Price
<b>Dual Band Base Station Repeater Antennas</b>								
GP-9/GP-9N	2m/70cm	8.5/11.9	200	SO/N	5'11"	16'6"	90	\$199.95
GP-6	2m/70cm	6.5/9.0	200	SO-239	3'8"	10'5"	90	\$149.95
GP-3	2m/70cm	4.5/7.2	200	SO-239	2'12"	5'11"	112	\$99.95
<b>Dual Band Mobile Antennas - All Black Anodized</b>								
SBB-7/SBB-7NMO	2m/70cm	4.5/7.0	70	PLNMO	-	4'7"	-	\$79.95
SBB-5/SBB-5NMO	2m/70cm	3.0/5.5	120	PLNMO	-	3'2"	-	\$58.95
SBB-2/SBB-2NMO	2m/70cm	2.15/3.8	100	PLNMO	-	20"	-	\$42.95
B-10/B10NMO	2m/70cm	-12.15	50	PLNMO	-	12"	-	\$42.95
<b>Dualband Fold-over Mobile Antennas</b>								
C767/C767NMO	2m/70cm	3.5/6.0	80	PL-259/NMO	-	3'2"	-	\$64.95
C757/C757NMO	2m/70cm	2.15/5.5	80	PL-259/NMO	-	3'4"	-	\$59.95
<b>Dualband Mobile Antennas</b>								
AX-50	2m/70cm	0/5.0	60	PL-259	-	21"	-	\$49.95
AX-75	2m/70cm	3.2/5.7	60	PL-259	-	2'6"	-	\$59.95
AX-95	2m/70cm	3.3/5.8	60	PL-259	-	3'2"	-	\$66.95

## Comet Tri-Band Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	WGT Lbs' oz"	LEN FT' In"	Max Wind Speed MPH	HRO Price
<b>TriBand Base Station Repeater Antennas</b>								
GP-15	6m/2m/70cm	3/6.2/8.6	200	SO-239	2'15"	7'11"	90	\$169.95
GP-98	2m/170cm/23cm	6.5/9.0/13.5	100	N-Female	3'6"	9'4"	90+	\$199.95
CX-333	2m/220/70cm	6.5/7.8/9.0	120	SO-239	3'10"	10'2"	112	\$179.95
<b>TriBand Mobile Antennas</b>								
SB-15	6m/2m/70cm	2.15/4.5/7.2	120	PL-259	-	4'10"	-	\$89.95
SB-97	2m/70cm/23cm	3.0/6.8/9.6	100	N-Male	-	3'3"	-	\$64.95
SBB-224	2m/220/70cm	2.15/3.2/5.5	150	PL-259	-	3'1"	-	\$78.95
SBB-224NMO	2m/220/70cm	2.15/3.2/5.5	150	NMO	-	3'1"	-	\$78.95
<b>HF Antennas</b>								
UHV-6	40/(20*)/(17*)15/1 0/6/2m/70cm	HF 0 dBi 2m 2.15 dBi 70cm 5.5 dBi	120 SSB HF 100W FM 6-70cm	PL-259	MAX 1'4"	MAX 6'4"	-	\$159.95
*L-14	Opt 20M coil for UHV-6						-	\$31.95
*L-18	Opt 17M coil for UHV-6						-	\$29.95
*L-3.5	Opt 75/80MM coil for UHV-6						-	\$34.95
HMC-6S	*40/20/15/10/6/2 M/70cm	HF 0 2M, 2.15 dBi 70cm 5.3 dBi	120W SSB HF 150W FM 6/2/70cm					\$159.95
HMC-7C	Opt 40MM coil for HMC-6S							\$34.95
CHA-250B	Ground Plane 3.5 57 MHz		150W SSB HF 125W CW	SO-239	7'11"	23'8"	67.5	CALL

## Comet Single Band and HT Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	LEN FT' In"	HRO Price
<b>Single Band Antennas</b>						
SBB-25/SBB-25NMO	2m	4.1	100	PL-259/NMO	4'8"	\$48.95
<b>HT Antennas</b>						
CH-32 MINI Ant	2m/70cm	-	10	BNC	1.75"	\$33.95
MH-510	6m/2m/70cm	0/0/3.2	10	SMA	20.75"	\$37.95
MH-511	6m/2m/70cm	-	10	SMA	4.25"	\$33.95
HT-224	2m/220/70cm	1.3/1.4/1.8	10	SMA	11"	\$47.95
MH-610	2m/220/70cm	0/1.8/3.2	10	SMA	14"	\$49.95
SMA-501 MINI Ant	2m/70cm	-	10	SMA	1.5"	\$29.95
SMA-3	2m/70/23cm	1.2/1.7/3.4		SMA	9.75"	\$41.95
SMA-24	2m/70cm	2.15/5.3	20	SMA	17.5	\$22.95
BNC-24	2m/70cm		20	BNC	17.5	\$22.95
SMA-503	2m/70cm	-	10	SMA	8.5"	\$29.95
CH-75	2m/70cm	-13.2	50	BNC	14.75	\$25.95
SH-95	2m/70/23cm	1.5/2/5.5	10	BNC	15"	\$34.95

## 6 Meter Antennas

MODEL	Description	FREQ	GAIN	F/B	Max Pwr Watts	CONN	SWR	LEN FT' In"	HRO Price
CA-52HB4	4 element beam	50-54 MHz	-	19 dB	400 W PEP	SO-239	<1.5:1	10'6" Boom	\$119.95
GH-50	Vertical (no radials)	50-54 MHz	2.15	-	60 FM	SO-239	<2.0:1	7'11" HI	\$99.95



# ANTENNAS & ACCESSORIES

## Mobile Antennas

### UHV-6 40 m - 70 cm HRO Price \$159.95

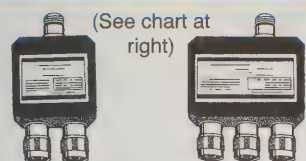
The UHV-6 is Comet's 3rd generation HF-UHF mobile antenna. Without the HF coils attached, it is a tribander for 6m / 2m / 70 cm. The top of the element has a threaded socket for attaching either the 40 m, 15 m or 10 m coil that is included, making the UHV-6 a quad-band antenna.

- An inexpensive antenna system for the popular HF and VHF/UHF bands.
- Covers 40 / 15 / 10 / 6 / 2m / 70 cm with optional coils for 20 m and 17 m.
- Easy to mount and easily configured to your individual needs.
- Fold-over hinge included.
- GAIN on 2m (2.15 dBi); 70cm (5.5 dBi).

### UHV-4 10 / 6 / 2 m / 70 cm HRO Price \$119.95

Developed for the Yaesu FT-8900. The 10m and 6m bands tune independently and will tune for SSM and FM.

## Duplexers / Triplexers



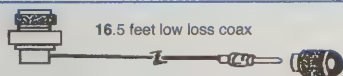
CF-4160K CFX-4310C

## Mounts



CP-5M  
CP-5NMO  
CP-5 3/8-24(shown)

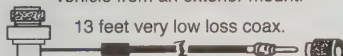
These universal mounts use the heavy-duty RS-730 lip bracket. Each includes 5 meters (16'6") of deluxe 2-step coax and an antenna mount connector: gold-plated PL-259 on coax end with detachable barrel for easy installation. 18 inch lead of mini RG-174 coax for easy entry through the weather seal without causing wind noise, water leaks and/or coax damage. Choose the model that has the connector for the antenna you are using.



3D5M

Detachable Connector

RG-188 provides easy entry into the vehicle from an exterior mount.



10 inches RG-188

CK-3M5 / CK-5N

Detachable Connector

## Comet High-Power Duplexers and Triplexers

Zinc-alloy, die-cast, twin cavity, low input loss, high-isolation, and high-power. Modernize your station with Comet high-performance antenna products.

MODEL	PORT	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol dB	Mix Conn	Port Conn	HRO Price
CF-416A (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads N-Male w/leads	\$49.95
CF-416C (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	N-Female	PL-259 w/leads N-Male w/leads	\$54.95
CF-4160I (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads N-Male w/o leads	\$48.95
CF-4160K (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads PL-259 w/o leads	\$48.95
CF-416B (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads N-Male w/leads	\$49.95
CF-706A (2m/70cm)	LPF HPF	1.3-90MHz 75-470MHz	175 175	350 350	0.5 0.5	40 40	SO-239	PL-259 w/leads PL-259 w/leads	\$74.95
CF-530 (6m/125-470)	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$74.95
CF-530C (6m/125-470)*	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$74.95
CF-360A (10m/6m)	LPF HPF	1.3-30MHz 50-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$69.95
CF-706 (2m/6m)	LPF HPF	1.3-56 MHz 75-320 MHz	350 350	600 600	0.4 0.4	40 40	SO-239	PL-259 w/cable PL-259 w/cable	\$69.95
CFX-4310C (2m/70cm/1.2)	LPF BPF HPF	1.6-60MHz 100-150MHz 350-500MHz 840-1.4GHz	600 450 300 100	1KW 800 500 200	0.15 0.25 0.25 0.3	50 50 50 50	N-Female	PL-259 w/leads N-Male w/leads N-Male w/leads	\$79.95
CFX-514 (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.2 0.25 0.3	55 55 55	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	\$79.95
CFX-514J (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.15 0.2 0.25	55 55 55	SO-239	SO-239 w/o leads SO-239 w/o leads SO-239 w/o leads	\$79.95
CFX-324A (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	\$88.95
CFX-324B (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/o leads PL-259 w/o leads PL-259 w/o leads	\$85.95

\* To run multiple antennas with the Yaesu FT-8900

## Comet Mobile Mounting Systems

Comet has a wide variety of mobile mounts. Choose the mount and coax cable assembly that best fits your personal needs. All Comet cables have detachable connectors.

MODEL	DESCRIPTION	HRO Price
<b>Mounts with Coax Cable Installed</b>		
CP-5M	Universal multi-angle lip mount w/deluxe cable SO-239/PL259 Conn.	\$69.95
CP-5NMO	Same as CP-5M but with NMO/PL-259 Conn.	\$69.95
CP-5 3/8-24	Same as CP-5M but with 3/8-24/PL-259 Conn.	\$69.95
GR-5M	Deluxe trunk-lip mount w/CK-3M5 Cable, UHF connectors	\$67.95
GR-5N	Deluxe trunk-lip mount w/CK-5N Cable, N-Type connectors	\$69.95
CM-5M	Standard Hvy-Duty Mag Mt w/RG-58A/U, Coax, UHF Conn, Max Antenna Height 4 ft	\$24.95
<b>Mounting Brackets Only, No Coax</b>		
RS-730	Heavy Duty universal lip mount, accepts S-239 connector	\$32.95
PRM-T	Heavy Duty trunk lip mount, accepts SO-239 connector	\$33.95
RS-720	Medium Duty universal lip mount, accepts SO-239 connector	\$29.95
RS-720NMO	Medium Duty universal lip mount, accepts NMO connector	\$29.95
RS-520	Light Duty universal lip mount, accepts SO-239 connector	\$29.95
EM-B80	Light Duty universal lip mount, accepts SO-239 connector	\$25.95
<b>Coax Cable Assemblies</b>		
CK-3M5	17 ft high quality cable inc 12" RG-188 to avoid water leak/cable damage. UHF Conn.	\$42.95
CK-3M	Same as CK-3M5 but 9' 9" of deluxe cable assy, UHF Conn.	\$35.95
CK-5N	13' 6" of deluxe 2-step cable assy, N- Conn.	\$49.95
5D4N	13' 6" low loss (2400MHz) coax cable, N-conn.	\$34.95
3D4N	13' 6" low loss (1200MHz) cable assy, N-conn.	\$28.95
<b>Antenna Connector Adapters</b>		
AD-25M	Turns an SO-239 mount into an NMO mount	\$14.95
AD-15M	Turns an NMO mount into an SO-239 mount	\$17.95
AD-10M	Turns an NMO mount into an N-female mount	\$17.95



### Choosing Your Larsen Mobile Antenna

Choose your antenna configuration based on the frequency, base type (e.g., magnetic mount) and thread type (e.g., NMO). Keep in mind that it is necessary to select a base with the same mounting style as the antenna. Typical bases and styles are shown below.

#### Thread Types

These are examples of each of the thread types. Select one and then select the base.

NMOHF



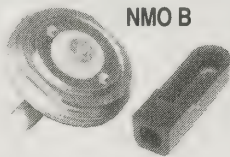
LM B



PO B



NMO B



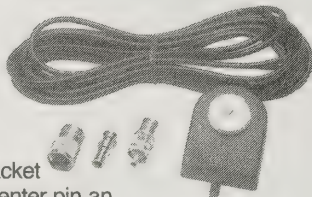
NMOHFTHK



#### Mount Configurations

In addition to the popular Motorola 3/4" (NMO) mounts shown here, mobile antennas for the Larsen mount (LM) and PO mount (PO) are excellent choices for amateur use. Each of these mounts comes in one of the thread types.

NMO TLP



Mounts:

NMO K premium quality rooftop.

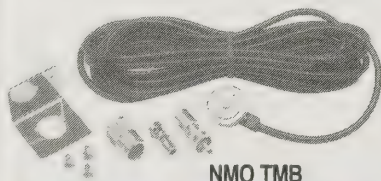
NMO MMR mag mount, 90# pull strength.

NMO TLP heavy duty trunk lid.

NMO TMB electropolished trunk gutter bracket

NMOHF for low or high frequencies (pull center pin an insulator for high frequencies)

NMOHFTHK NMO thick mount (surfaces to 1/2" thick) high or low frequencies



NMO TMB



NMO MMR

### Scanner Antenna

#### Tri-Band Antenna

NMO150 / 450 / 800

Frequency:

150-165 / 450-470 / 806-940 MHz

Gain: .....2.14 dBi ± 1dB

Mount:.....NMO

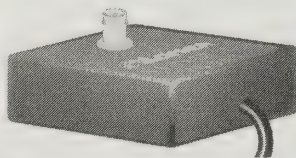
Height: .....16.5"



This is a great antenna for scanner operation. It is NOT tunable for amateur operation.

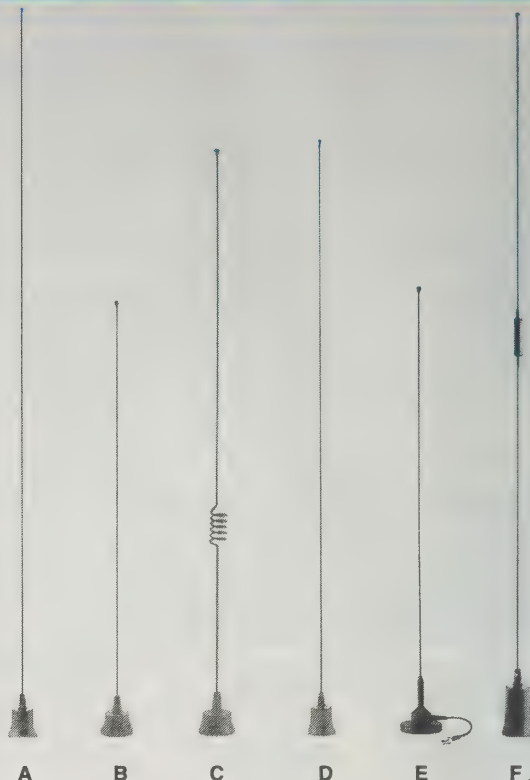
#### Magnetic Mount BNC MM BNC

Connectors: BNC on the mag and coax. Coax: RG 58 A/U, 12'



**Rubber Ducks  
On Page 105**

### NMO Series Antennas



Once the base and thread type are selected, the final step is to choose the antenna. Gain antennas are made of a coil and a whip. Quarter wave antennas are just a whip. All Larsen mobile antennas meet the industry's most demanding specs for electrical efficiency and mechanical durability.

- VSWR at 1.5 to 1 or less.
- Colors: Black coil base; chrome or all black whip.
- 3-year No-Nonsense Warranty.™
- Made in USA

#### A NMO 150 B (2m)

Frequency:.....144-174 MHz  
Gain:.....3 dB  
Electrical:.....5/8 Wave  
Height:.....49"

#### B NMO Q C

Frequency:.....144-448 MHz  
Gain:.....Unity  
Electrical:.....1/4 Wave  
Height:.....22" max.

#### C NMO 440 B (70cm)

Frequency:.....440-460 MHz  
Gain:.....3 dB  
Electrical:.....5/8 over 1/4  
Height:.....30"

#### D NMO 220 B (1.25m)

Frequency:.....220-225 MHz  
Gain:.....3 dB  
Electrical:.....5/8 Wave  
Height:.....32"

#### E MS 144 FME

Frequency:.....144-148 MHz  
Gain:.....Unity  
Power:.....35 watts  
Electrical:.....1/4 Wave  
Base:.....2" Mini Mag  
Height:.....22"  
Coax:.....12' RG 174  
Connector:.....FME Universal  
(Adapters available in BNC, PL, MPL, SPIN SMA, TNC)  
Also available in MS220 FME, MS440 FME.

#### F NMO 2 / 70

Frequency:.....144-148MHz  
442-448 MHz  
Gain:3.8 dB VHF; 2.4 dB UHF  
Electrical:.....5/8 wave VHF  
Collinear UHF  
Height:2m / 70cm Dual band

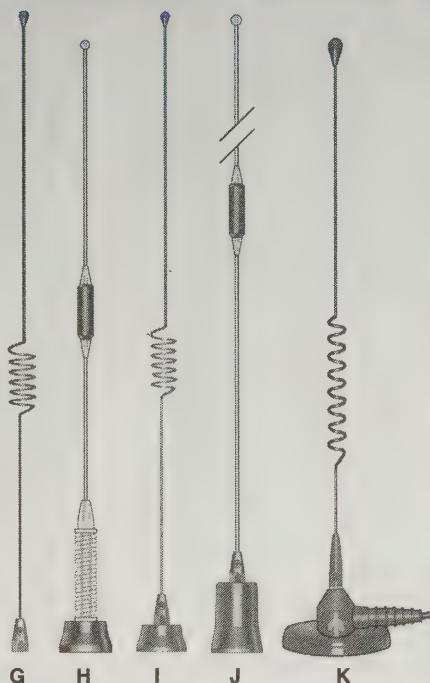


# MOBILE ANTENNAS

## Dual-Band Antennas

Larsen dual band antennas provide excellent performance on 2m and 70 cm. Each antenna is factory preset to guarantee optimal performance with no tuning required.

- Range of dual band configurations are available.
- Kulrod copper-plated 17-7 stainless steel rods for greater transmit range.
- Soldered contacts.
- Premium materials and construction provide superior electrical performance and mechanical durability.
- VSWR 1.5:1 or less.
- 3-year No Nonsense Warranty.



**G LMC 2 / 70 B**  
 Frequency: 144-148/440-450 MHz  
 Gain: ..... Unity  
 Power: ..... 100 Watts  
 Type: VHF: Center load 1/4 wave  
 ..... UHF: Center load 3/4 wave  
 Base: ..... Q CONE LMC B  
 Height: ..... 18"

**H NMO 2 / 70 SH**  
 Frequency: 144-148/440-450 MHz  
 Gain: ..... Unity  
 Power: ..... 100 Watts  
 Type: VHF: Center load 1/4 wave  
 ..... UHF: Center load 3/4 wave  
 Base: NMO UHF base B w/spring  
 Height: ..... 17"  
 Whip: ..... W NMO 2/70 SH

**I NMOQ 2 / 70 B**  
 Frequency: 144-148/440-450 MHz  
 Gain: ..... Unity  
 Power: ..... 100 Watts  
 Type: VHF: Center load 1/4 wave  
 ..... UHF: Center load 3/4 wave  
 Base: ..... NMO UHF base B  
 Height: ..... 18"  
 Whip: ..... W NMOQ 2/70 B

**J NMO 2 / 70 C**  
 Frequency: 144-148/440-450 MHz  
 Gain: ..... 2.4/4 dB  
 Power: ..... 100 Watts  
 Type: ..... 5/8 Wave; Collinear  
 Base: ..... NMO 2/70 BCO  
 Whip: ..... W 2/70  
 Height: ..... 36 3/4"

**NMO 2 / 70 B**  
 Frequency: 144-148/440-450 MHz  
 Gain: ..... 1.6/3.5 dB  
 Power: ..... 200 Watts  
 Type: ..... Center loaded; Collinear  
 Base: ..... NMO 2/70 BCO  
 Whip: ..... W 2/70 B Open coil  
 Height: ..... 36 3/4"

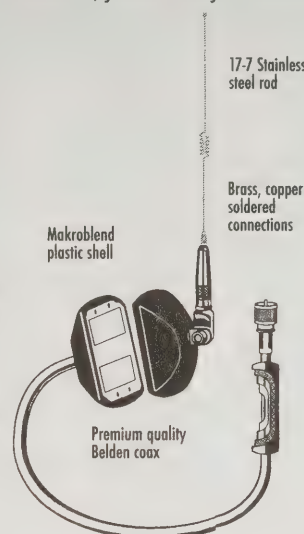
**K MM 2 / 70 PL**  
 Frequency: 144-148/440-450 MHz  
 Gain: ..... Unity  
 Power: ..... 100 watts  
 Coax: . RG58 A/U Dual Shield, 12'  
 Pull strength: ..... 54 lbs.  
 Type: VHF: Center load 1/4 wave  
 ..... UHF: Center load 3/4 wave  
 Base: ..... 3" round magnet mount  
 Connector: ..... PL 259 installed  
 Weight: ..... 1 lb.  
 Height: ..... 17"

**Call Toll-Free for Quotes  
 on Larsen Antenna**

## On-Glass Antennas

Larsen's advanced design techniques in glass-mount antennas result in superior transmit range plus tremendous mechanical durability. Glass mount performance is nearly identical to rooftop mounts, with no holes to drill. Properly installed on-glass antennas grip for years under demanding conditions, yet are easy to remove and remount..

- Patented low-impedance design is electrically efficient.
- Single-band antennas are pre-cut, 1/2 wave design.
- Transformer outside vehicle.
- Copper plated whips.
- Rated 50 watts output.
- VSWR at 1.5 to 1 or less.
- Less than .5 dB loss through glass vs. rooftop.
- New circuit board technology locks in solid state performance.
- 3M's best on-glass adhesive grip.
- Made in USA with 3 year No-Nonsense Warranty™



### Dual-Band

The KG 2 / 70 is a VHF half-wave and a UHF collinear. It comes with 14 feet of RG-58/U

coax. The antenna installs easily on any flat surface. Remove the whip without tools for car washes or low garages. **HRO Price \$84.95**

**L KG 2/70-CX-PL (Dual)**  
 Frequency: 144-148/442-448 MHz  
 Gain: ..... 2.4 dB VHF; 4.5 UHF  
 Power: ..... 50 Watts  
 Type: ..... 1/2 wave / Collinear  
 Connector: ..... PL 259 (loose)  
 Height: ..... 32-3/4"

### Single Band

**M KG 144 PL (2m)**  
 Frequency: ..... 144-160 MHz  
 Gain: ..... 2.4 dB  
 Type: ..... 1/2 Wave  
 Connector: ..... PL 259 (loose)  
 Height: ..... 45"

**N KG 440 PL (70cm)**  
 Band: ..... 440-460 MHz  
 Gain: ..... 2.4 dB  
 Type: ..... 1/2 Wave  
 Connector: ..... PL 259 (loose)  
 Height: ..... 11-3/4"

**Call a  
 Helpful Ham  
 at HRO**



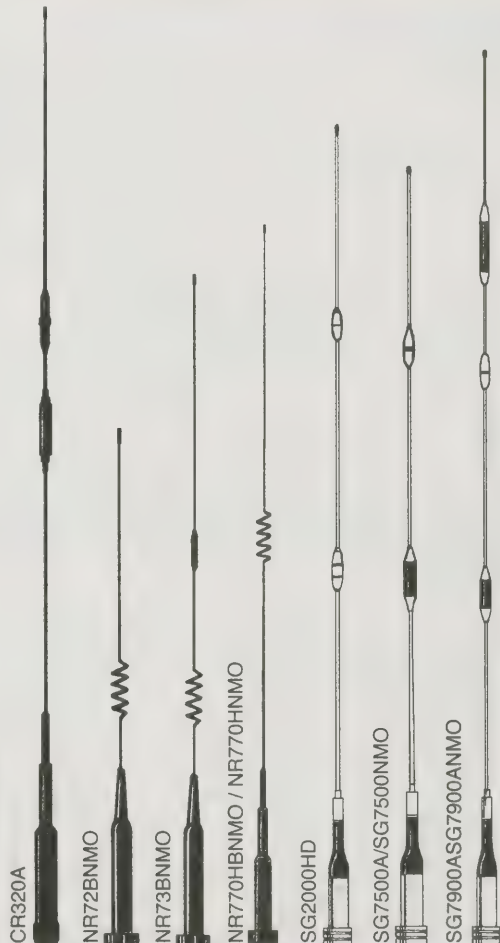
## The Standard by Which All Others are Judged

### Diamond Base Antennas

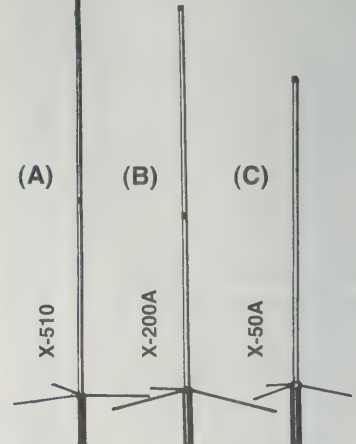
All base antennas grounded for lightning protection. Factory adjusted for American amateur bands; no tuning required.

Model	Bands	Gain, dBi	Watts	Con. Type	WT (lbs)	Lth (ft)	MPH (no ice)	Fig	HRO Price
A502HB	6m Yag 2 elem.	6.3 dBi	400pep		3.75	2.6			\$89.95
A504HB	6m Yag 4 elem.	7.7 dBi	400pep		7.7	10.7			\$149.95
A144S5	2 m Yagi 5 elem.	6.0 dBi	100pep		1.4	3.1			\$59.95
A430S10	430 Yagi 10 elem.	13 dBi	100pep		1.4	3.6			\$69.95
A430S15	430 Yagi 15 elem.	14.8 dBi	100pep		2.15	7.4			\$89.95
CP-22E	2 m	6.5	200	UHF	3	9	90	B	\$54.95
DP-GH62	6 m	6	200	UHF	7	21	80	B	\$149.95
F-22A	2 m	6.7	200	UHF	5	10.5	112	B	\$99.95
F-23A	2 m	7.8	200	UHF	8	15	90	A	\$129.95
F-718	70 cm	11.5	250	N	5	15	90	A	\$209.95
G-200	2.4 GHz	11		N		6	135	C	\$214.95
U200A	70 cm / 23 cm	8.3 / 11.7	100	N	3	6	135	C	\$119.95
V2000A	6m / 2m / 70cm	2.1 / 6.2 / 8.4	150	UHF	4	8.3	110	B	\$159.95
X-30A	2 m / 70 cm	3.0 / 5.5	150	UHF	2	4.5	135		\$69.95
X-50A	2 m / 70 cm	4.5 / 7.2	200	UHF	3	5.6	135	C	\$107.95
X-50NA	2 m / 70 cm	4.5 / 7.2	200	N	3	5.6	135	C	\$114.95
X-200A	2 m / 70 cm	6.0 / 8.0	200	UHF	4	8.3	112	B	\$129.95
X-300A	2 m / 70 cm	6.5 / 9.0	200	UHF	4	10	112		\$139.95
X-300NA	2 m / 70 cm	6.5 / 9.0	200	N	4	10	112	B	\$159.95
X-510NA	2 m / 70 cm	8.3 / 11.7	200	N	5	17.2	90	A	\$189.95
X-510NJ	144/430	8.3 / 11.7	200	N	5	17.2	90	A	\$219.95
X-510MA	2 m / 70 cm	8.3 / 11.7	200	UHF	5	17.2	90	A	\$189.95
X-500HNA	2 m / 70 cm	8.3 / 11.7	200	N	7	17.8	90+	A	\$249.95
X-700HNA	2 m / 70 cm	9.3 / 13.0	200	N	12	24	90	-	\$389.95
X-3200A	2m/1-1/4m/70cm	6.0 / 7.8 / 8.0	100@	UHF	4	10	112	B	\$179.95
X-6000A	2m / 70 / 23cm	6.5 / 9.0 / 10.0	100	N	5	10	112	B	\$199.95
BB7V	2-30 MHz		250	UHF	6	5/22	80		\$399.95
CP-725H	40 / 15 / 10 / 6 m		250	UHF	6.6	11.7	100		\$399.95

- 52-54 MHz only. DPGH62 is adjustable from 50-54 MHz.
- 146-148 MHz, 100 watts on 2m, 200 watts on 1-1/4m & 70 cm.



- Wide-band performance
- Highest gain
- Fiberglass radome
- Factory adjusted
- DC grounded
- UPS shippable
- High wind rating
- Stainless hardware



### Diamond Mobile Antennas

Factory adjusted for American amateur bands, no tuning required unless specified. Mobile antennas have fold-over feature with spring loaded hinge (except NR72BNMO, NR73BNMO, M285, M685, MG200, MR77 and MR77SMA). Magnetic mount not recommended for antennas over 50".

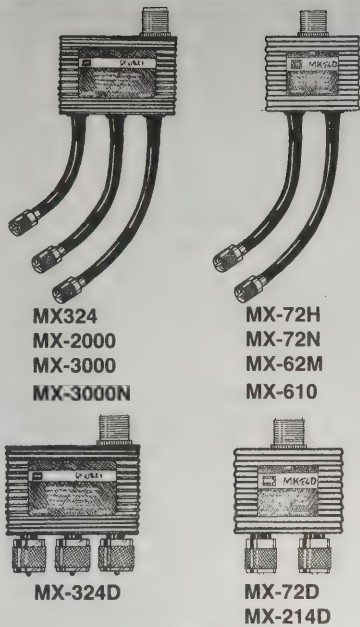
Model	Bands	Gain/dBi	Watts	Mount	Lth/in	HRO Price
CR-270A	2 m/70 cm	2.15 dBi	50	UHF	17.3	\$42.95
CR-320A <sup>#4,5</sup>	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100@	UHF	36	\$82.95
CR320BNMO	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100@	NMO	36	\$89.95
CR-627B <sup>#4,5</sup>	6m/2m/70cm	2.1/4.5/7.2	150	UHF	60	\$99.95
CR-627BNMO <sup>#4,5</sup>	6m/2m/70cm	2.1/4.5/7.2	150	NMO	60	\$99.95
CR8900A <sup>4,7(FM Only)</sup>	10m/6m/2m/70cm	2.15(2m) 5.5(70cm)	60	UHF	50	\$109.95
D220 discone	100-1600 MHz	2	50	PL-259	35.5	\$109.95
MG200 <sup>7</sup>	2.4 GHz	7	-	N	23.6	\$99.95
HF6FX <sup>4,7</sup>	6 m	2.15	250	UHF	44	\$69.95
HF50CX <sup>4,7</sup>	6 m	3.5	200	UHF	71	\$99.95
M285 <sup>4,8</sup>	2 m	3.4	200	UHF	52.4	\$31.95
M285SNMO	2 m	3.4	200	NMO	52.4	\$31.95
MR77 <sup>4,7</sup>	2 m/70 cm	2.15/3.4	70	†	20	\$39.95
M685S <sup>4,7</sup>	6 m	2.15	200	UHF	52.4	\$31.95
M685SNMO	6 m	2.15 dBi	200	NMO	52.4	\$31.95
MR77SMA <sup>4,7</sup>	2m/70cm	2.15/3.4	70	‡	20	\$44.95
NR124NMO	23 cm	8.4	100	NMO	25	\$64.95
NR140BNMO	220 MHz	4	159	NMO		\$53.95
NR22L <sup>4</sup>	2 m	6.5	100	UHF	96.8	\$69.95
NR2000NA	2 m/70 cm/23 cm	3.15/6.3/9.7	100	N	39	\$89.95
NR-72BNMO <sup>#4,7</sup>	2 m/70 cm	2.1/2.1	100	NMO	14	\$44.95
NR-73BNMO <sup>#</sup>	2 m/70 cm	2.1/5.3	100	NMO	33	\$57.95
NR-770HA	2 m/70 cm	3.0/5.5	200	UHF	40	\$56.95
NR-770HNMO	2 m/70 cm	3.0/5.5	200	NMO	41	\$56.95
NR-770HB <sup>#</sup>	2 m/70 cm	3.0/5.5	200	UHF	40	\$59.95
NR-770HBNMO <sup>#</sup>	2 m/70 cm	3.0/5.5	200	NMO	41	\$59.95
NR-770HRKS <sup>2</sup>	2 m/70 cm	3.0/5.5	200	UHF	40.2	\$109.95
NR-770R	2 m/70 cm	3.0/5.5	200	UHF	39	\$51.95
NR-7900 <sup>4</sup>	2 m/70 cm	3.7/6.4	300/250	UHF	57	\$84.95
SG-M510 <sup>7</sup>	2 m/70 cm	2.15/5.5	100	UHF	37	\$59.95
SG-M911 <sup>4,5,7</sup>	6 m/2 m/70 cm	2.15/3.8/5.8	60	UHF	41	\$69.95
SG-2000HD <sup>4</sup>	2 m	5.2	250	UHF	62	\$89.95
SG7000A <sup>4,7</sup>	2 m/70 cm	2.1/3.8	100	UHF	18	\$69.95
SG7500A	2 m/70 cm	3.5/6.0	150	UHF	41	\$77.95
SG7500NMO	2 m/70 cm	3.5/6.0	150	NMO	42	\$79.95
SG7900A <sup>4</sup>	2 m/70 cm	5.0/7.6	150	UHF	60	\$119.95

# Black anodized finish †Mag Mt with 13' RG58 Cable w/UHF & Mag Mt w/13' RG58 cable w/SMA  
4. Magnetic mounts not recommended. Vehicle ground required. 5. 52-54 MHz only.  
6. 100 watts on 1-1/4m; 200 watts on 2m and 70cm. 7. Gain Rated in dBi 8. Tunable from 144-174 MHz. 9. Blackwith adhesive-backed mount

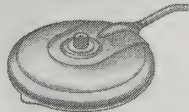


# ANTENNAS & ACCESSORIES

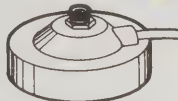
## Diamond Duplexers and Triplexers



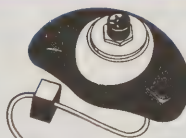
Model	Port	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol. dB	MIX Conn.	Port Conn.	HRO Price
MX-37	LPF HPF	1.6 - 470 900 - 1300		100 50	.25 .45	45	Type N	PL-259/12" 5D cable N Male/12" 5D cable	\$59.95
MX62M	LPF HPF	1.6 - 56 76 - 470		200 200	.2 .2	50 50	SO-239	PL-259/12" cable PL-259/12" cable	\$74.95
MX-72D	Similar to MX-72H, but Direct Connection								\$48.95
MX-72H	LPF HPF	1.6-30 140-150 400-460	400 150 100	400 150 100	.1 .1 .2	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable	\$54.95
MX-72N	Similar to MX-72H, but type-N on UHF port								\$49.95
MX-72A	Similar to MX-72N, but type-N , PL-259/12" 5D cable								\$54.95
MX-214D	LPF HPF	140-150 220-225	150 100	400 250	.3 .4	45 45	SO-239	PL-259/no cable PL-259/no cable	\$59.95
MX-324	LPF BPF HPF	1.6-60 220-225 400-550		800 600 500	.3 .4 .4	40 40 40	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	\$89.95
MX-610	LPF HPF	1.3 - 30 49 - 470		600 500	.2 .25	45 45	SO-239	PL-259/12" cable PL-259/12" cable	\$89.95
MX-2000	LPF BPF HPF	1.6-60 110-170 300-950		800 800 500	.15 .20 .25	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	\$84.95
MX-3000	LPF BPF HPF	1.6-160 350-500 850-1300		800 400 200	.15 .25 .30	55 55 55	N-Jack(F)	PL-259/12" cable PL-259/12" cable N-male/12" cable	\$79.95
MX-3000N	Similar to MX3000, but with Type-N male on BPF connection								\$85.95



K702M

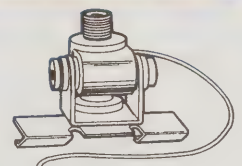
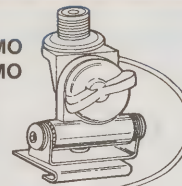


SPM35 / SPMNMO  
DPK4NM-N



K600M / K600S

K412CNMO  
K412SNMO  
K412C  
K412S

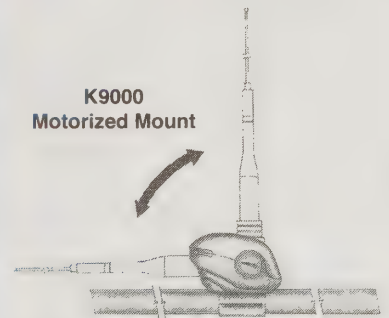


K400C  
K400CNMO  
K400-3/8C  
K400S / K400SNMO

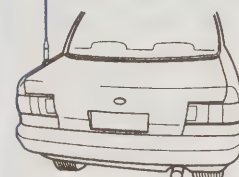
## Mobile Mounts

Model	Description	HRO Price
C101	UHF base 6.5' RG316 Teflon coax w/PL259	\$35.95
C101NMO	NMO base 6.5' RG316 Teflon coax w/PL259	\$35.95
C104SMA	4' RG58/U Extension cable for PL-259. 90 degree SMA Male & SO-239	\$16.95
C105SMA	5' RG58/U Extension cable for C101/C101NMO. 90 degree SMA Male	\$16.95
C110BNC	10' RG316 extension cable for C101/C101NMO. Use front radio installations. BNC male	\$24.95
C110SMA	10' RG316 extension cable for C101/C101NMO. Use front radio installations. SMA male	\$24.95
C110	10' mini-8/RG8X extension cable for C101/C101NMO. Use front radio installations.	\$15.95
C211	Combination of C101 and C110. 16.5 feet cable assembly	\$47.95
C213	UHF base, 13.5' RG316 Teflon Coax with PL-259	\$44.95
C213NMO	NMO base, 13.5' RG316 Teflon Coax with PL-259	\$44.95
CRM	Stainless steel right angle mount with U-bolt	\$16.95
DPK-4NM-N	Type N Magnet. 13' 5mm coax w/Type-N plug. Good to 1300 MHz.	\$54.95
HRKS	Adhesive backed UHF mount, 13.5' RG316 teflon coax with SMA and PL-259 adapter	\$69.95
K400-3/8C °	Special mount for 3/8X24 thread Antenna. 6.5 feet RG316 w/PL-259	\$73.95
K400C °	Deluxe mount with UHF type base. 6.5 feet RG-316 Teflon coax w/PL-259	\$73.95
K400CNMO °	Deluxe mount with NMO type base. 6.5 feet RG316 Teflon coax w/PL-259	\$73.95
K400S	Deluxe mount with UHF type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$79.95
K400SNMO	Deluxe mount with NMO type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$79.95
K412C	Trunk/hatchback mount. UHF base, 6.5' Teflon coax w/PL-259. 45" max ant	\$64.95
K412CNMO	Trunk/hatchback mount. NMO base, 6.5' Teflon coax w/PL-259. 45" max ant	\$64.95
K412S	Trunk / hatchback mt. UHF base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	\$69.95
K412SNMO	Trunk / hatchback mt. NMO base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	\$69.95
K515S	Deluxe luggage carrier mt. UHF base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$69.95
K515SNMO	Deluxe luggage carrier mt. NMO base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$69.95
K540KM	Deluxe Mirror/Luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	\$59.95
K550KM	Deluxe mini van luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	\$69.95
K600M	Tilt angle (0-9 degrees) trunk mount. Black. RG-188 and low loss 7 mm cable.	\$57.95
K600S	Tilt angle (0-9 degrees) trunk mt UHF base. 13.5 feet RG316 w/SMA (PL259 adapter inc)	\$62.95
K601M °	UHF hideaway trunk mount. 6.5 feet RG316 Teflon coax w/PL-259	\$69.95
K601NMO °	NMO hideaway trunk mount. 6.5 feet RG316 Teflon coax w/PL-259	\$69.95
K702M	Deluxe low-profile magnet/suction mount. 6.5" diameter, 13' RG58 & PL-259	\$49.95
K9000LRM	Motorized mount for luggage rack. Use C-series cable assemblies	\$104.95
K9000LRMO	Same with oversize K515 hardware	\$109.95
K9000TM	Motorized mount for trunk lid. Use C-series cable assemblies	\$104.95
NMO/UHF	NMO to UHF adapter. Polished Chrome. Low VSWR to 500 MHz	\$12.95
NMO/UHF-B	NMO to UHF adapter. Black Chrome. Low VSWR to 500 MHz	\$13.95
SPM35	UHF type base on heavy 1.5 lb/4" magnetic, 13' 5mm coax / PL-259.	\$39.95
SPMNMO	NMO type base on heavy 1.5 lb/4" magnet, 13' 5mm coax with PL-259	\$46.95

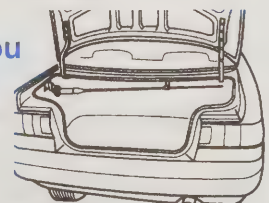
K9000  
Motorized Mount



K601M / K601NMO



Now you  
don't!



9. Use C110  
for front radio  
installations



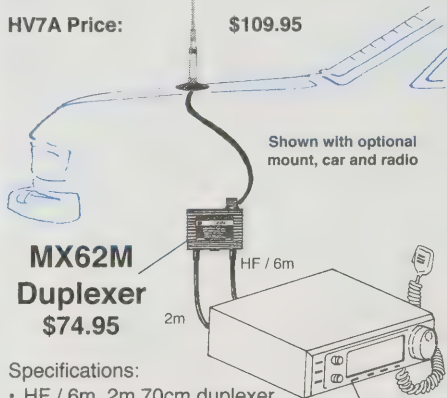
# DIAMOND ANTENNA

## HV7A Mobile Antenna System For New HF / VHF Transceivers (such as: IC706 series, FT100 series and the FT8900R)

The HV7A has 5 band capability: 70cm, 2m, 6m and 2 HF bands through use of Loading Coils. Fold-over feature allows for easy access into low overhead buildings.

Bands Supplied: 10m / 6m / 2m / 70cm  
Opt. Loading Coils 40m / 20m / 17m / 15m  
Power, P.E.P.: HF 120w / VHF 200w  
Mount Connection UHF  
Length: 54" (HV7A)  
SWR: 1.5:1 nominal

HV7A Price: \$109.95



**MX62M  
Duplexer**  
\$74.95

### Specifications:

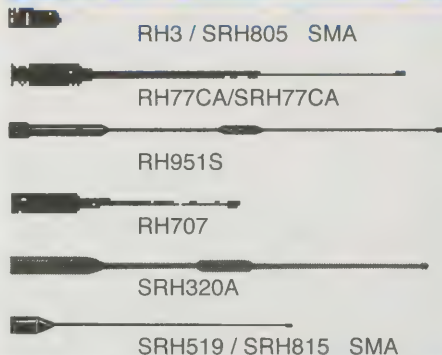
- HF / 6m, 2m 70cm duplexer.
- 1.6-56 MHz LPF
- 76-470 MHz HPF
- (76-120 receive only)
- Watts: 600 P.E.P.
- Loss: .2 dB LPF  
.3 dB HPF
- Isolation: 50 dB

Use with HF/ VHF mobile transceivers such as the IC-706 series, FT-100 or combine 2m and HF rigs.

### Optional Loading Coils

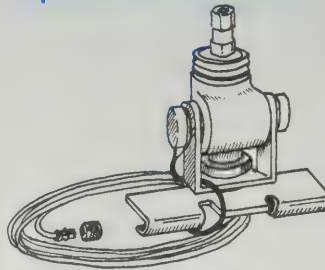
HVC7	40m	\$44.95
HVC14	20m	\$37.95
HVC18	17m	\$37.95
HVC21	15m	\$37.95

## Antennas for Handhelds



# ANTENNAS & MOUNTS

## K400-3/8C Special Trunk Mount



### for 3/8 x 24 thread Antennas

Here's the ideal mounting system for Outbacker Perth, OB Jr., and other medium weight antennas. A spring is recommended for stiff or heavy antennas.

Power: 350 watts RMS  
Cable: 6 1/2' RG316  
teflon coax  
Connector: PL-259  
Adjustment: 2 axis

K400-3/8C \$69.95

Note: Use C110, 10 ft extension for front radio installation. \$14.95

## Specialty Antennas

### NR7900A

#### 2m / 70cm Mobile

High power dual-band 2m/70cm mobile antenna. 300 wts (2m) and 250 watts (70cm). Excellent for High Power applications. Use K400 and K600 series mounts. **HRO Price \$84.95**

### CR8900A

#### Quad Band FM

10m/6m/2m/70cm Quad FM band antenna for FT8900A radio or multi radio applications. Use K400 and K600 Series mounts.

**HRO Price \$99.95**

### MR77 • MR77SMA 2m / 70cm Mobile

Ideal antenna for increased performance of HT radio or where a compact antenna is required. Dual-band with Magnetic Mount base. 1/4 wave (2m) and 1/2 wave (70cm), black finish. Available in UHF or SMA cable configuration. **HRO Price \$34.95**

### NR-770HRKS 2m/70cm Mobile HRO Price \$109.95

### CR270A 2m/70cm Mobile HRO Price \$42.95

## Diamond Accessories

Model	Description	HRO Price
CA23RS	Lightning surge protector, DC-2500 MHz, 200 w, type-N female conector	\$39.95
CA23RW	Lightning surge protector, DC-2500 MHz, 200 w, type-N female, waterproof	\$44.95
CA35RS	Lightning surge protector, DC-1000 MHz, 400 w, SO-239	\$29.95
CA35RPW	Lightning surge protector, DC-1000 MHz, 400 w, SO-239, waterproof	\$41.95
CX-210A	Heavy duty wideband coax switch, DC-1000 MHz. 1.5 kW, UHF(F) to UHF(M) Waterproof	\$44.95
CX-210N	Heavy duty wideband coax switch, DC-1500 MHz. 1.5 kW, N connector	\$74.95
CX-310A	Heavy duty 3 position coax switch, wideband. DC-800MHz. SO-239 connectors.	\$83.95
DL-30A	Dummy load. DC-500 MHz, 15W RMS (max)/100w peak. PL-259 connector.	\$39.95
DL-30N	Dummy load. DC-500 MHz, 15W RMS (max)/100w peak. Type N connector.	\$39.95
NMO/UHF	NMO to UHF adapter converting antennas with PL259 to NMO-Chrome	\$12.95
NMO/UHF-B	NMO to UHF adapter converting antennas with PL259 to NMO-Black	\$13.95

## Diamond Handheld and Receiving Antennas

Model	Description	HRO Price
D-130J	Wideband discone 25-1300 MHz. 200 W transmit 50-1300 MHz. No cable.	\$99.95
D-130NJ	Wideband discone 25-1300 MHz. 200 W transmit 50-1300 MHz. 50 W 6M. No cable, Type-N	\$99.95
MAY-1000	VHF/UHF Multiband handheld adjustable DF beam 120-500 MHz	\$99.95
RH-3	2m / 70cm dual-band HT antenna. 1.75" BNC. 120-900 MHz receive.	\$24.95
RH-77CA	High gain 2m / 70cm dual-band HT antenna. Receive range to 900 MHz. BNC	\$24.95
RHF-40	Super flexible version of Model RH-77CA	\$29.95
SRHF-40	Super flexible 15" tail SMA 2m / 440 HT antenna	\$29.95
RH-205	2m HT antenna, telescopic, 5/8 fully extended, 47.5"; 1/4 retracted, 9".	\$24.95
RH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" BNC. 10 watts.	\$24.95
RH-707	2m / 70cm dual-band, tiltable whip HT antenna. 8-1/4" BNC.	\$33.95
RH-951S	High gain 2m / 70 cm / 23 cm slim tri-band HT antenna. Flexible. BNC (Wide band receive)	\$44.95
SRH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" SMA, 10 watts.	\$27.95
SRH-77CA	High gain 2m/70cm dual-band flexible HT antenna. SMA	\$24.95
SRH-320A	2m/1-1/4m/70cm tri-band HT antenna. Flexible. SMA. 10 watts	\$49.95
SRH-789	Telescoping handheld antenna 95-1100 MHz, 6 sections, folds at base	\$34.95
RH-789	Same as SRH-789 but BNC connector	\$34.95
SRH-805	2m / 70cm / 23cm tri-band HT antenna. 1.75" SMA, 10 watts.	\$27.95
SRH-815	2m / 70cm / 23cm tri-band HT antenna. Flexible. 6" SMA, 6 watts.	\$31.95
SRH-999	6m / 2m / 70cm / 23cm quad-band HT antenna. Flexible. 21 1/4" SMA, 10 watts	\$59.95



# HANDHELD ANTENNAS / MOBILE ANTENNAS

## Duckies & Telescoping Antennas

**PRYME**®

*Radio Products*

### VHF / UHF Dualband Antennas

#### RD-2 SMA

2 M / 440 MHz, 2" tall small duck, SMA connector. **HRO Price \$19.95**

#### RD-8

2 M / 440 MHz, flexible 6.5" tall HT antenna, gold plated BNC connector. **HRO Price \$17.95**

#### RD-9

2 M / 440 MHz, thin 7" antenna, BNC connector. **HRO Price \$18.95**

#### RD-9 SMA

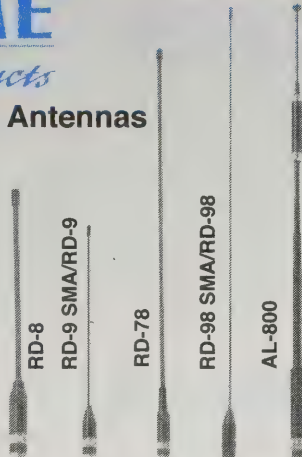
2 M / 440 MHz, thin 7" antenna, SMA connector. **HRO Price \$21.95**

#### RD-78

2 M / 440 MHz, flexible 15" tall HT antenna, 2.15 dB / 3.2 dB gain, gold plated BNC connector. **HRO Price \$22.95**

#### RD-98

2 M / 440 MHz, 17" tall, 1/16" diameter HT antenna, BNC con-



connector. **HRO Price \$24.95**

#### RD-98 SMA

2 M / 440 MHz, 17" tall, 1/16" diameter HT antenna, SMA connector. **HRO Price \$27.95**

#### AL-800

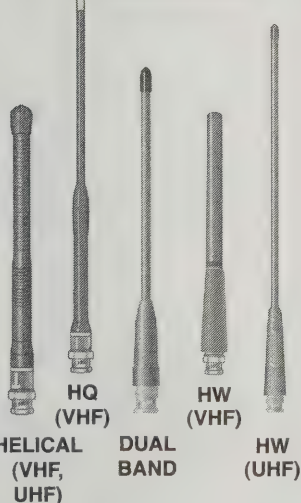
2 M / 440 MHz, telescoping antenna, extends to 34", collapses to 10". Whip replaceable with 9" rat tail (included), 3.2/5.5 dB gain, gold plated BNC connector. **HRO Price \$34.95**

**LARSEN**®  
ANTENNAS

KulDuckies have outstanding transmit range with 1.5:1 VSWR. Made of copper and brass radiators, they are scope tuned to precise frequencies. Constructed with soldered connections, plasticol dip process, injection-molded housings and silver plated contact.

KulDuckies are available in Helical (VHF, UHF), HQ Helical (VHF), Dual Band, and Half Wave.

### KulDuckies



HELICAL (VHF, UHF) DUAL BAND HW (VHF) HW (UHF)

#### KD4 2/70

Amateur dual band KD antenna, BNC connector. **HRO Price \$48.00**

#### KD4 FREQ HQ

Helical 1/4 wave 136-222 MHz (specify frequency), 9 1/2" tall, BNC connector. **HRO Price \$30.00**

#### KD4 VHF

VHF helical 136-222 MHz (specify frequency), 8" tall, BNC connector. **HRO Price \$24.00**

#### KD4 UHF

UHF helical 406-512 MHz (specify frequency), 3" tall, BNC connector. **HRO Price \$24.00**

#### KD142 MHW

Collapsible 1/2-wave 144-155 MHz, 11" to 44 1/2" tall, BNC connector. **HRO Price \$46.00**

## 2m / 70 cm Dual-Band Antennas

There are more dual-band antennas on these pages:

**COMET**

See Page 98

**LARSEN**

See Page 101

**DIAMOND**

See Page 102

Brand	Model	Type	Frequency MHz	Gain	Weight oz.	HRO Price
Larsen	NMO 2/70	2m	144-148	2.6 dB	3.9	\$54.00
		70 cm 5/8 collinear	440-450	5.5 dB		
Austin	500C	2 m	144 -148	Unity	6	\$32.95
		70 cm	440 - 450			
	Metropolitan	2 m	144 -148			\$39.95
		220 MHz	220 - 225	Unity	6	
Valor	GM270	2m	144 -148	2.6 dB	—	\$39.95
		70 cm	440 - 450	4.0 dB		
	MM270B	2m	144 -148	—	—	\$39.95
		70 cm	440 - 450	—		
	PM144-440	2m	144 -148	—	—	\$19.95
		70 cm	440 - 450	—		
	MO144-440	2m	144 -148	Unity	—	\$16.95
		70 cm	435 - 450	2. dB		

## Duplexers

When using a single antenna with mobile radios that have separate 2 meter and 440 MHz outputs, you must use a duplexer.

Comet Antenna has a wide variety of duplexers & triplexers with gold-plated connectors, high isolation and the highest power handling abilities. See page 99.

Yaesu's AD-3 handles up to 50 watts. Its short cables attach to VHF radios with an SO-239 and to UHF with a type N connector. VHF to UHF isolation is 50 dB. **HRO Price \$49.95**

Diamond has a wide collection of duplexers and tri-plexers for coupling antennas and transceivers. See page 103.

## On-Glass Antennas

**LARSEN**®  
ANTENNAS

### Single Band 1/2-Wave

Larsen's full selection of on-glass antennas for single-band and dual band use are described on page 101. All single band antennas are pre-cut. A single 1/2 wave design provides 2.4 dB gain.

**KG-144-PL 2 M HRO Price \$64.95**  
**KG-440-PL 440 MHz HRO Price \$54.95**



### Antenna Specialists

← **AP-143**

This unique on-glass styling with a coil looks like a cellular antenna. Broad banded. No tuning necessary. The length of the whip is only 26 inches. Black coating on the antenna is very attractive. No ground plane required. **HRO Price \$55.95**

**Secure Ordering from HRO  
on the Web:**

<http://www.hamradio.com>



# MOBILE ANTENNAS

## Maldol

### Dual Band Mobiles

Models for 2m / 70cm have a black finish.

Model	Max Pwr	Gain	Lgt	Conn
EX-107RB	80 watts	2.6/4.9	29"	PL-259
EX-107RBNMO	80 watts	2.6/4.9	29"	NMO
SHG-1500B	200 watts	4.5/7.5	59"	PL-259
SHG-1500BNMO	200 watts	4.5/7.5	59"	NMO

### 2-Meter Mobiles

Ground independent models are center loaded 5/8 wave.

Model	Max Pwr	Gain	Lgth	Conn
SHG-140	200 watts	4.1	56"	PL-259
SHG-140NMO	200 watts	4.1	56"	NMO

### Ultra-Compact Vertical 8-Band HF / 2m / 70 cm Base Antenna

HRO Price \$299.95

At only half the height and weight of traditional HF vertical antennas, model HVU-8 includes 2m and 70cm. It is easily configured and installed in confined or restricted spaces such as apartment balconies, or for temporary use. Each HF band and 6m has an independently tuned radiator and radial system while the main antenna mast is tuned for constant operation on 2m / 70 cm.

- HF and 6m: 1/4 wave.
- 2m: 1/2 wave 2.15dBi gain.
- 70cm: two 5/8 waves in phase, 5.5 dBi gain.
- Impedance: 50 Ohm.
- Max power HF: 200 W SSB; 6m-70 cm: 150 W FM.
- Height: 8 ft 6 inches; Weight: 5 lbs 7 ozs.

### 2m / 220 / 440



**SUPER-M  
V/U NMO**  
VHF / UHF Mobile  
HRO Price: \$72.95

The typical 1/4 wave antenna used on commercial (taxi, trucking companies, etc.) and government vehicles (ambulances, other city vehicles, school buses, state patrol, etc.) can easily be replaced by the SUPER-M with tremendous, even life-saving, results. One antenna covers 140-170 MHz, 200-225 MHz and 400-480 MHz. It handles 200 watts with a direct feed and is only 18" high.

**SUPER-M V/U** screws directly onto a 5/16" - 24 thread stud mount [also called the "LM" Larsen Mount]. **SUPER-M V/U-NMO** comes packaged with an adapter to screw onto a Motorola NMO style mount.

**To expedite delivery,  
HRO ships  
from your nearest store.**

## Valar

### 2 Meter On Glass

#### Glassmaster™ GM144 - 144-146 MHz

Pro-Am's on-glass antenna has a rugged copper plated whip with black finish and an interior coupler box with adjustable slot to fine tune the SWR. Power rated at 50 watts, they come with 14' of RG58 coax, a PL-259 connector, and mounting package for easy, no hole installation.

HRO Price \$19.95

### Mag Mount Whips

#### MICRO-MAG™

2 m kit with 17-7 ph stainless steel whip and 12' of cable to a PL-259. Can be cut for 220 or 450 MHz.

HRO Prices

VAA-002	PL-259 chrome	\$23.95
VAA-002B	PL-259 black	\$23.95
VAA-002BNC	with BNC	\$27.95



### VHF / UHF Dual-Band

#### Cover-It-All

#### 2 m / 70 cm Antenna

Cover It All with a 19" stainless steel whip. Its 1-1/8" threads match Pro-Am mounts and 3/4" hole Motorola TAD/TAE mounts. The antenna covers 144-148 MHz and 435-450 MHz with less than 2:1 SWR. Handles up to 150 watts. MO144-440: HRO Price \$16.95

#### Magnetic Cover-It-All

These 2 m / 70 cm antennas that Cover It All come with magnetic mount and 12' of RG58 cable with BNC or PL259 connector. Black finish.

HRO Prices

PM144-440 BN	BNC	\$33.95
PM144-440	PL-259	\$19.95

### Mounts

Model	Description	HRO Price
AST-TMK *	Universal trunk mount	\$39.99
AST-MMK *	Heavy duty mag mount	\$49.95
AST-HC	3/8 x 24 hex collar	\$6.95
AST-NMO	NMO mounting	\$6.95
AST-SO239	SO-239 mounting	\$6.95

\* Includes 3/8 x 24 adapter

### HF Mobiles

#### PHF Series



These mono-band mobile antennas have a black fiberglass lower section with integral coil and an adjustable (and removable) stainless steel whip (except for the PHF160). These antennas are designed for maximum efficiency, low SWR and broad bandwidth. They are power rated at 250 watts PEP and built to withstand considerable use. Standard 3/8x24 threads. Total assembled length on all models 96" (except PHF6 at 58").

Model	Band M	Band Width (kHz)	HRO Price
PHF160	160	12	\$79.95
PHF80	80	35	\$21.95
PHF75	75	36	\$21.95
PHF40	40	60	\$19.95
PHF30	30	100	\$17.95
PHF20	20	150	\$19.95
PHF17	17	175	\$19.95
PHF15	15	200	\$19.95
PHF12	12	300	\$19.95
PHF10	10	500	\$19.95
PHF6	6	1000	\$17.95

### 5-Band HF Mobile

#### Model AB5

This heavy-duty slim-line mobile covers 75 m, 40 m, 20 m, 15 m and 10 m amateur bands.

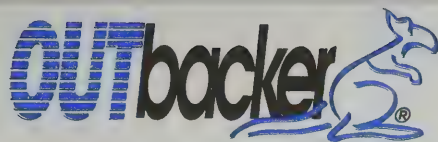
Heavy-gauge copper wire wound on 3/8" fiberglass, with nickel-chrome brass fittings and 17-7 taper ground stainless steel whips assure dependable operation. AB5T provides individual tuning for each of the 5 bands. When tuned, instant band switching is possible with good VSWR at the reset frequencies for each band. All 5 tunable whips are double locked with stainless steel screws.



AST-MMK



# HF MOBILE ANTENNAS



The Ultimate All-Band  
HF Mobile Antennas

## Perth & Perth Plus Antennas

**HRO Prices:**  
Perth \$329.95  
Perth Plus \$329.95

The Perth covers 10-80 meters and the Perth Plus adds the 6m and 2m bands. Both are sleek 3-1/2 foot stingers with a 4 foot main shaft where the taps are located. They have a tough, yet flexible fiberglass core, helically wound with copper wire hand tuned to the various "tap" frequency points. Both offer high performance with low wind drag. Mount them easily on a trunk lip, hatch, or bumper with a standard 3/8 X 24 stud. The stinger retracts into the main shaft for easy stowage. With a proper ground plane, Perth antennas are also suitable for apartment and condo installations.

## Outreach Antenna

**HRO Price \$419.95**

- A portable antenna system for limited-space or temporary installations.
- All bands, 160-10 meters, including WARC and only 12 ft. tall!
- 10, 12, and 15 meters are  $\frac{5}{8}$  wave; all bands are center loaded for peak performance.
- Handles 150 watts P.E.P.
- Split 8 foot shaft and 4 foot stinger-antenna breaks down to 4 feet for easy portability.
- Ends in standard  $\frac{3}{8}$  x 24 base.
- Uses Outbacker's® band tap system.

## Outbacker Antenna

**HRO Price \$319.95**

With the Outbacker® there is no need to change coils when changing HF bands. The antenna comes in a six foot version that handles up to 300 watts PEP and a four foot Junior model for up to 150 watts PEP. The antennas are made of fiberglass coated with smooth epoxy resin and polyurethane. The pre-tuned copper helical winding has connection sockets constructed of rust-free brass, clearly marked for each band. The antenna covers all bands from 10 to 80 meters. Mount the antenna with a standard 3/8 X 24 thread. Use Hustler's BM-1 or SSM ball mounts. Optional heavy duty spring and 2" base can be mounted at the bottom of the antenna and attached to a PL-259.



## Alpha Delta Outpost™

**Tripod /  
Ground Coupler  
Ground Mount System**

**HRO Price \$195.95**

- Matches the base impedance of all Outbacker® antennas.
- Fold-over  $\frac{3}{8}$  x 24 SO-239 top mount.
- Constructed of aircraft 6061-T6 aluminum, stainless steel hardware and wing nuts.
- No digging-no holes in ground-no concrete.
- Fold-out legs act as a large capacitor providing proper coupling to the ground and proper base impedance to the antenna. Fold-up design for 10-minute installation.

## Outbacker "Joey"

**HRO Price \$299.95**

- Covers HF/VHF bands 2m through 80m including WARC bands.
- Rated at 20 W, all modes.
- Uses Outbacker tap system.
- Smaller antenna packs away in its included cloth transport.
- Comes with a 12 foot copper braid counterpoise.
- Can be installed directly on the FT817 rear SO-239 connector.
- Has a 30" shaft and a 20" stinger when fully extended. Weighs just over a pound.

## MicroMount

**HRO Price \$49.95**

For use with the "Joey," MicroMount has a fixed height of 8" with a 12" diameter footprint on 3 legs. It folds to an 8" length. Has a fully articulated pan head mount. Includes a 12" velcro strap for mounting to most anything. Includes a 3 counterpoise system and weighs less than 10 ounces.

**Call HRO  
toll free  
or check  
the web site  
for  
up-to-date  
pricing,  
specials,  
promotions,  
and other  
great  
information  
for the Ham.**



## HF / VHF / UHF Mobile Antenna

**ATAS-120**

**\$299.95 - HRO Price**

The ATAS-120 provides HF/VHF/UHF coverage with automatic motorized tuning. Controlled from the transceiver, it adjusts the radiator length for best SWR. Compatible with Yaesu's FT-100, FT-847, FT-857, and FT-897.

## HF / VHF / UHF Portable Field Antenna

**ATAS-25**

**\$219.95 - HRO Price**

The ATAS-25 has radiating elements covering amateur bands 10-40m, 6m, 2m, and 70cm. Mounts to a standard camera tripod (not included). Uses a manual tuning system. Dual frequency operation possible with a duplexer (not included). Antenna collapses to less than two feet to carry; expands to 7.2 foot maximum height. Weight is 2.05 pounds.

## HF Mobile

## Ham Sticks®

Ham Sticks® are two-piece mono-band antennas consisting of a hollow fiberglass base section, a loading coil wound directly onto the fiberglass, with a covering of PVC shrink tubing. The black oxide brass base fitting has 3/8" X 24 male threads that fit most amateur mobile mounts. The top section is a tapered 17-7 PH tempered stainless steel whip that telescopes into the base section for frequency adjustment. The assembled antenna is about 7' long.

Ham Sticks Model	Band	HRO Price
9175	75 m	\$29.95
9160	60 m	\$28.95
9140	40 m	\$26.95
9130	30 m	\$26.95
9120	20 m	\$26.95
9117	17 m	\$26.95
9115	15 m	\$26.95
9112	12 m	\$26.95
9110	10 m	\$26.95
9106	6 m	\$26.95





# CRANK-UP TUBULAR

## MA-SERIES CRANK-UP MASTS

The premier MA-Series crank-up Tubular Towers are designed to be both safe and neighbor friendly. The slender design gives a Clean, flagpole-like appearance, while allowing for antennas up to 10 sq. feet in 50 mph winds. Per EIA Specifications, adequate safety margins are included. Uniform Building Code calculations are available for most models.

The MA-40 and 550 models come standard with flat base, two 1/2" x 10" anchor bolts, wall bracket and rotor plate mounted on top of top section. No guying is required when tower is properly bracketed to the eve of your roof.

MA-Series towers are completely self-supporting only when used with accessory MARB or MAB Series bases. The MARB Series rotor base allows the entire tower and antenna to be rotated from the base (rotor not included). This provides for easy rotor maintenance plus emergency hand rotation of the entire tower and antenna.

The MA-550MDP, 770MDP and 850MDP models include a heavy duty motor drive with positive pull down. The MDP models provide motorized raising and lowering of the tower. A remote control unit (RMC-1000) accessory is available that allows raising and lowering from your ham shack or other remote location.

All models without motor drives come standard with manual hand winches which have load actuated brakes for maximum safety. This feature prevents the winch from free-wheeling and causing injury to you or your installation in the event that you lose your grip during raising or lowering.

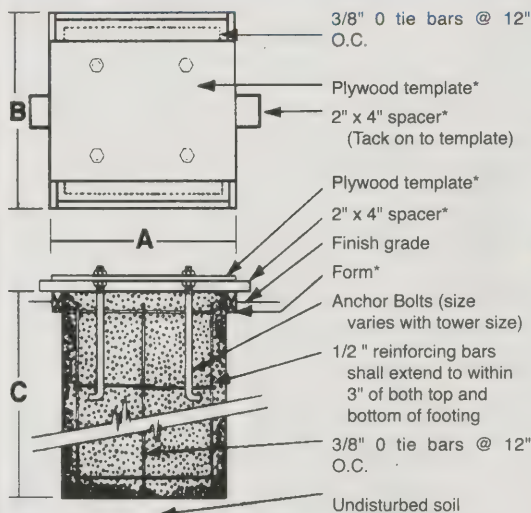
All steel used at US Tower conforms to ASTM specifications. All welding is done by certified factory personnel. All of our towers are factory tested by trained personnel before leaving the plant.

Model Number	Height Maximum	Height Minimum	Sections	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
MA-40	40'	21'6"	2	242	3" sq.	4.5"	CALL
MA-550	55'	22'1"	3	435	3" sq.	6.625"	CALL
MA-550MDP*	55'	22'1"	3	620	3" sq.	6.625"	CALL
MA-770	75'	22'10"	4	645	3" sq.	8.0"	CALL
MA-770MDP*	75'	22'10"	4	830	3" sq.	8.0"	CALL
MA-850MDP*	90'	23'6"	5	1128	3" sq.	10.0"	CALL

All Towers will handle 10 sq. ft antenna at 50 MPH winds.

\* These towers also requires purchase of MCL-100 or RMC-1000

## MA-SERIES BASE INFORMATION



\*To be removed after base is installed.

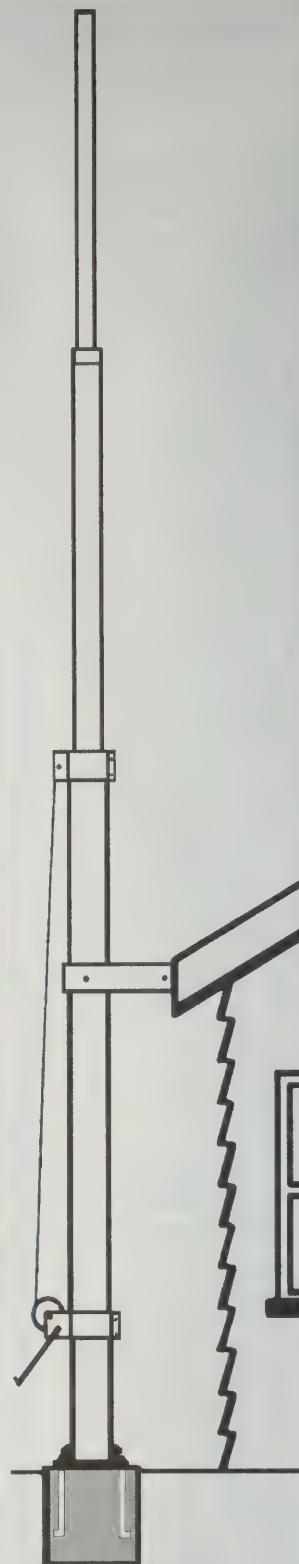
Model	A	B	C	HRO Price
MA-40 standard flat base	16"	16"	16"	CALL
MA-550 standard flat base	20"	20"	20"	CALL
MARB-40 Rotator Base	3'	3'	4'	CALL
MARB-550 Rotator Base	3'	3'	5'6"	CALL
MARB-770 Rotator Base	3'	3'	6'6"	CALL
MARB-850 Rotator Base	4'	4'	6'6"	CALL

Base dimensions may vary with different soil compositions.  
Allow ample time for concrete to cure.  
MAB and MARB dimensions are the same.

Tower base hole size and rebar are for illustration only, current UBC engineering calculations should be used to determine your specific installation.

Rebar is not provided by US Tower. MA-40 & 550 use their standard base as a template. These standard bases use only 2 bolts and require no rebar. Wooden template included with MAB & MARB bases.

Because of wide variations throughout the country in zoning requirements and loading conditions (snow, wind, ice, etc.), it is the responsibility of the customer to make Certain that his Tower conforms to all applicable codes. We recommend you obtain all necessary permits prior to purchase.



The factory reserves the right to make changes or modifications without notice.



# MA-SERIES ACCESSORIES

Model	Description	Weight
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## MAF Raising Fixture

MAF-Series Raising Fixture accessory for easy raising and antenna servicing. For use with MARB and MAB bases.

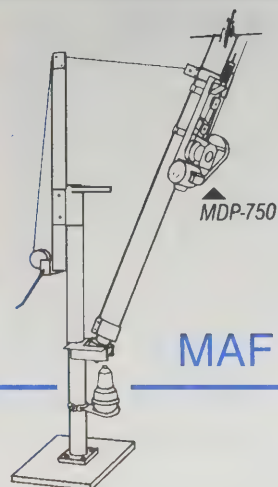
MAF-40	Raising fixture for MA-40	35#
MAF-550	Raising fixture for MA-550	70#
MAF-770	Raising fixture for MA-770	75#
MAF-850	Raising fixture for MA-850	80#

### The Customer is Responsible

for obtaining all local city or county building and tower permits

AND

for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.



MAF

## MARB Freestanding Rotator Base

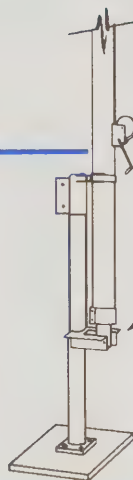
MARB-40	Freestanding rotator base for MA-40 with four 3/4" x 27" anchor bolts and thrust bearing	75#
MARB-550	Freestanding rotator base for MA-550 with four 1" x 36" anchor bolts and thrust bearing	140#
MARB-770	Freestanding rotator base for MA-770 with four 1" x 36" anchor bolts and thrust bearing	195#
MARB-850	Freestanding rotator base for MA-850 with four 1-1/8" x 36" anchor bolts and thrust bearing	280#



MARB

## MAB Freestanding Type Base

MAB-40	Freestanding hinged base for MA-40 with four 3/4" x 27" anchor bolts	55#
MAB-550	Freestanding hinged base for MA-550 with four 1" x 36" anchor bolts	119#
MAB-770	Freestanding hinged base for MA-770 with four 1" x 36" anchor bolts	175#
MAB-850	Freestanding hinged base for MA-850 with four 1-1/8" x 36" anchor bolts	180#



Hinging allows for easy installation on both MAB and MARB bases.

MAB

## Coax Standoff Arms

CX-2M	Coax standoff arms for MA-40	4#
CX-3M	Coax standoff arms for MA-550	6#
CX-4M	Coax standoff arms for MA-770	8#
CX-5M	Coax standoff arms for MA-850	10#

IV-16	The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with the MARB rotator base.	5#
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Model	Description	Weight
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## Motor Drives

MD-75	Heavy-duty motor drive with one HP motor and gear box.	155#
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## Remote Control Accessories

RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location.	18#
MCL-100	Limit switch control package includes limit switches, limit switch brackets, and control box at the base of the tower.	7#

**Call Toll-Free for Discounts on  
U.S. Towers and Accessories**





## TMM SERIES

US Tower's latest design includes the compact TMM Series towers giving Hams in restricted areas an alternative. The TMM Series has a minimum retracted height of 11'4" (may vary, depending on rotator used) and a maximum height of 47' including mast. At the towers' retracted height, visual impact is reduced to a minimum and antenna servicing is made easier. Typically the tower and antenna are below the roof line of your home when the tower is fully retracted.

The TMM Series towers are lightweight, freestanding crank-up towers that allow up to 18 square feet of antenna in 50 mph winds per EIA specifications. The TMM-433HD handles 24 square feet. These lightweight towers should provide many years of trouble free service. All of our towers have a hot dipped galvanized finish inside and out.

## TX SERIES

US Tower's freestanding TX Series crank-up towers are as strong or stronger than most competitors' heavy-duty models. The TX Series towers have 21 foot sections with 4 foot overlap to provide extra height and strength. In addition, the overlap helps prevent binding while lowering your tower in high wind and conditions.

The TX Series towers have a large enough top section (12 1/2") to permit installation of most rotators inside the section for maximum strength while allowing the section to fully retract. Cross bracing at critical points on the tower ensures safety and additional strength. All US Towers crank-up towers have a heavy-duty, hot dipped galvanized finish both inside and out, which should provide many years of trouble free service.

The TX Series towers come complete with rotator plate and base hardware which includes, large steel anchor bolts and heavy-duty steel T-base that allows the tower to hinge on for easy installation. All T-bases will accept the TRX Series raising fixtures to make installations and antenna servicing a one man installation. All TX Series

## HDX SERIES

This superior strength allows for large stacked arrays, while using our commercial type bases and anchor bolts that can be easily installed and vertically adjusted. All HDX Series T-bases are designed to use our TRX Series raising fixtures to make installations and antenna servicing a one man job.

Modified top sections for the HDR-300 rotators are available at a small additional cost. US Tower carries as accessories many different sizes and strengths of masts which can be used with the HDX Series towers. The HDX-572MDPL and 589MDPL motorized towers provide dual level wind, positive pull down and heavy duty gear box features. The HDX-572MDPL comes only with limit switch brackets. The HDX-589MDPL comes complete with the MCL-100, limit switch package. All towers using MDP-750

The TMM-433SS and 541SS must have the rotator top mounted. The TM-433HD will accept the Alliance HD-73 and Telex Ham IV inside the tower. Oversized rotators will prevent full retraction of your tower; however, they may be used if full retraction is not required. This restriction is dependent on location of rotator plate. All TMM Series towers include anchor bolts, rotor plate, hinged T-base, load actuated winch, and eight feet of 2" OD x 120" antenna mast.

The TMM-433SS will accept the MD-75 motor drive accessory. The TMM-433HD and 541SS will accept the MD-75 and MDP-750 accessory motor drives. The MDP-750 motor drive accessory is compatible with both of our MCL-100 and RMC-1000 limit switch packages (see accessories).

towers include Fulton hand winches (except MDP and MDLP models) which feature automatic load actuated brakes for maximum safety. Masts and motor drives are available as accessories (see accessory page).

The TX-472MDP comes complete with MDP-750 motor drive and limit switch brackets. The TX-489MDPL includes the MDPL-1000 motor drive and limit switch brackets. Limit switch assemblies and remote raising devices are available (MCL-100) (RMC-1000) for all MDP-750 and MDPL-1000 motor drive units (see accessory page for description).

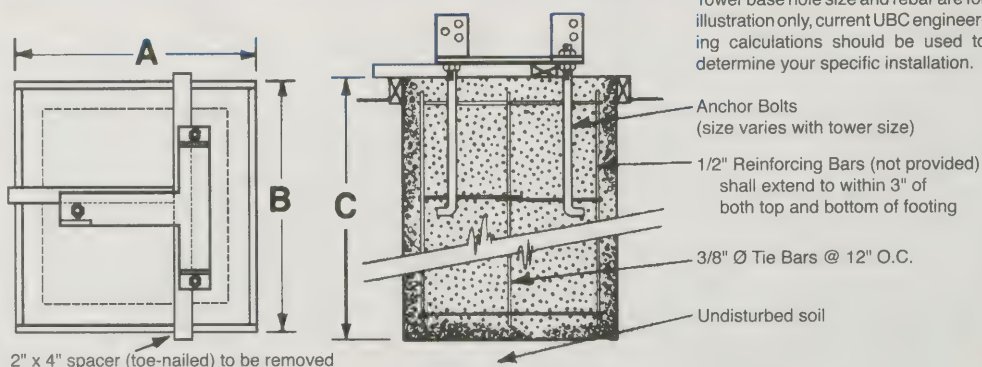
US Tower's TX Series requires no guying. The wind loading is calculated at 18 square feet of antenna in 50 mph winds per EIA specifications. To assist you in applying for necessary construction permits, Uniform Building Code calculations are available for most models.

US Tower's HDX Series heavy-duty crank-up towers have up to 2 1/2 times more windloading capacity than others commonly advertised.

and MDPL-1000 motor drives may use the RMC-1000 accessory limit switch package which allows the raising and lowering of your tower from the comfort of your ham shack or any remote location. MCL-100 is also available (see accessory page).

All HDX Series towers come complete with rotator plate, anchor bolts and heavy-duty T-base (doubles as template). US Tower's special T-base design allows the tower to hinge for easy installation. US Tower's crank towers do not require guy wires. The HDX Series towers are rated at 30 square feet of antenna at 50 mph winds per EIA specifications. To assist you in getting a construction permit, Uniform Building Code calculations are available for most towers.

## CRANK-UP TOWER BASE INFORMATION



Tower base hole size and rebar are for illustration only, current UBC engineering calculations should be used to determine your specific installation.

Model	A	B	C
TMM-433SS	4'	4'	4'6"
TMM-541SS	4'	4'	5'
TMM-433HD	3'	3'	5'
TX-438	5'	5'	5'
TX-455	5'	5'	6'
TX-472	5'	5'	6'6"
TX-489	5'	5'	8'
HDX-538	5'	5'	6'
HDX-555	5'	5'	6'6"
HDX-572	5'	5'	7'
HDX-589	5'	5'	8'
HDX-5106	5'	5'	9'
MA40	3'	3'	4'6"
MA550	3'6"	3'6"	5'
MA770	5'	5'	5'6"
MA850	5'	5'	6'



# SELF-SUPPORTING CRANK-UP TOWERS

## Tower Specifications

### COMPACT TMM-SERIES CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TMM-433SS	33' w/o Mast	11'4"	4	315	10"	18"	CALL
TMM-433HD	33' w/o Mast	11'4"	4	400	12.5"	20 7/8"	CALL
TMM-541SS	41' w/o Mast	12'	5	430	10"	20 7/8"	CALL

Towers handle 18 sq. ft. antenna at 50 MPH winds. TMM-433HD handles 24 sq. ft.

### TX-SERIES FREE-STANDING CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TX-438	38'	21'6"	2	355	12.5"	15"	CALL
TX-455	55'	21'	3	670	12.5"	18"	CALL
TX-472	72'	22'8"	4	1040	12.5"	21 5/8"	CALL
TX-472MDP*	72'	22'8"	4	1210	12.5"	21 5/8"	CALL
TX-489MDPL	89'	23'4"	5	1800	12.5"	25 5/8"	CALL

All Towers will handle 18 sq. ft. antenna at 50 MPH winds.

\* This tower requires purchase of MCL-100 or RMC-1000

### HDX-SERIES HEAVY-DUTY CRANK-UP TOWERS

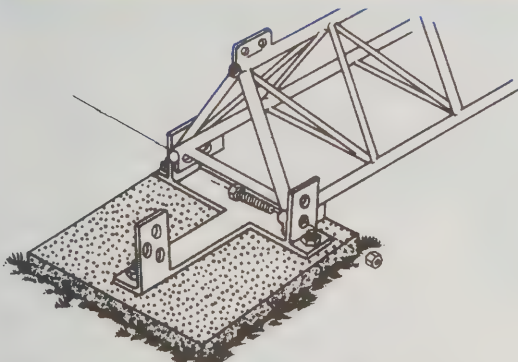
Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
HDX-538	38'	21'6"	2	600	15"	18"	CALL
HDX-555	55'	22'	3	870	15"	21 5/8"	CALL
HDX-572MDPL	72'	22'8"	4	1600	15"	25 5/8"	CALL
HDX-589MDPL	89'	23'8"	5	2440	15"	30 5/8"	CALL
HDX-689MDPL	89'	23'8"	5	3450	18"	37 1/8"	CALL
HDX-5106MDPL	106'	24'8"	6	3700	15"	37 1/8"	CALL

All Towers will handle 30 sq. ft. antenna at 50 MPH winds.

HDX-689MDPL rated at 60 sq. ft. of antenna at 50 mph winds.

HDX-5106MDPL rated at 35 sq. ft. of antenna at 50 mph winds.

**Call Toll-Free for Discounts on  
U.S. Towers and Accessories**



The Customer is Responsible for obtaining all local city or county building and tower permits AND for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

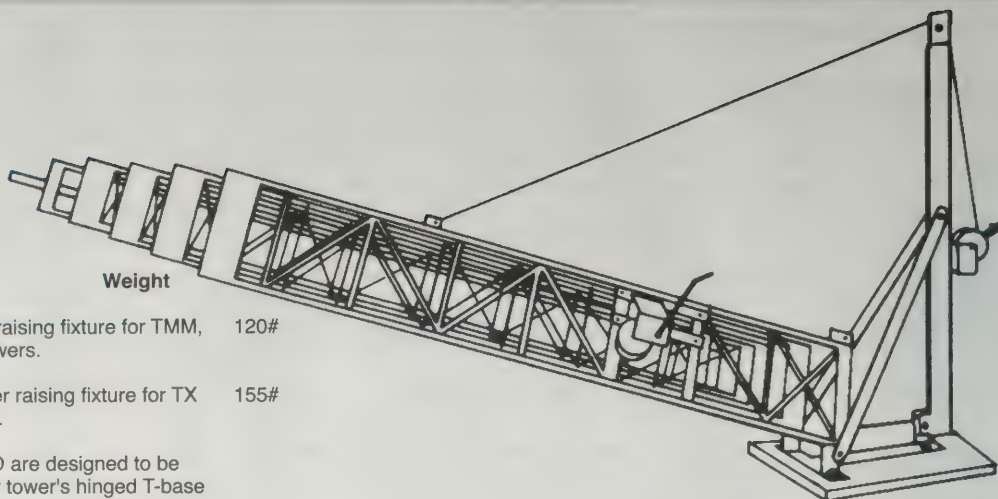
The factory reserves the right to make changes or modifications without notice.



## Raising Fixture

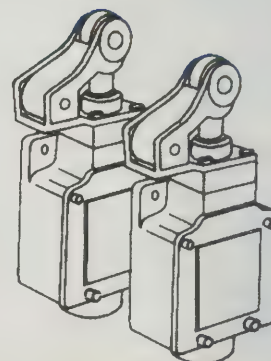
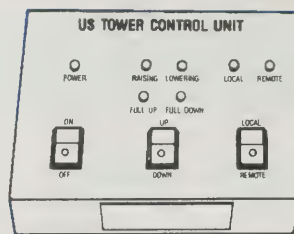
Model	Description	Weight
TRX-80	Standard model tower raising fixture for TMM, TX, and HDX series towers.	120#
TRX-80HD	Heavy-duty model tower raising fixture for TX and HDX series towers.	155#

Both TRX-80 and 80HD are designed to be easily mounted on your tower's hinged T-base for quick and safe one-man installation or antenna servicing.



## Remote Control

Model	Description	Weight
RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location. The RMC-1000 includes limit switches, limit switch brackets, and two relay boxes. The RMC-1000 can only be used with the MDP-750 and MDPL-1000 motor drives.	18#
MCL-100	Limit switch control package. The MCL-100 includes limit switches, limit switch brackets and control box at the base of the tower. The MCL-100 allows you to raise and lower your tower with automatic shut down when maximum or minimum height is reached. The MCL-100 can only be used with the MDP-750 and MDLP-1000 motor drives.	7#



## Motor Drives

Model	Description	Weight
MD-75	Heavy-duty motor drive with 1 HP motor and gear box.	155#

Call factory for replacement 1 HP motors, handwinches, limit switches, 3/16" x 7" x 19" and 1/4" x 7" x 19" aircraft cable, anchor bolts, belts, pulleys, sprockets, and modified bases. Tower dolly rentals are available. The factory reserves the right to make changes or modifications without notice.



MD-75

### The Customer is Responsible

for obtaining all local city or county building and tower permits **AND** for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

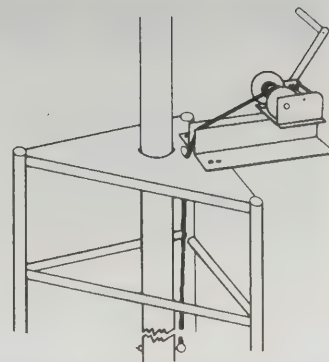
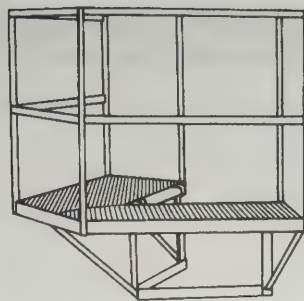


# CRANK-UP ACCESSORIES

**Model**      **Description**      **Weight**

## Service Platform

**HDP**      Large service platform with safety railings to provide a safe and comfortable surface while installing or maintaining your antenna and rotator.      125#

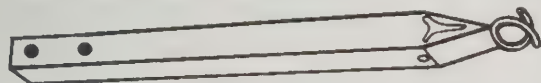


## Mast Raising Fixture

**MRF**      Mast raising fixture with winch and cable that attaches to the top of your tower to assist in raising and lowering your antenna mast.      20#

## Coaxial Arm Sets

**IV-16**      The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with MARB rotator base.      5#



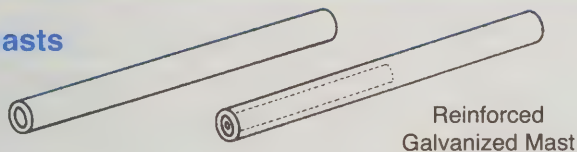
**CX-2**      Set of 2 coax standoff arms      6#  
**CX-3**      Set of 3 coax standoff arms      8#  
**CX-4**      Set of 4 coax standoff arms      10#  
**CX-5**      Set of 5 coax standoff arms      13#

## Thrust Bearing



**TB-2US**      Thrust Bearing for 2" mast, 2 flange holes      10#

## Masts



US Tower offers two different types of masts. The M-5, 10, 15 and 20 masts have .120" wall thickness. The M-15R and 20R have steel pipe inserts in the lower half of the mast which provides extra strength where most needed without adding unnecessary weight in the top portion. The M-15R and 20R have a wall thickness of .250".

**Model**      **Description**      **Weight**

**M-5**      2" O.D. x 5 foot galvanized mast      14#  
**M-10**      2" O.D. x 10 foot galvanized mast      25#  
**M-15**      2" O.D. x 15 foot galvanized mast      40#  
**M-15R**      2" O.D. x 15 foot reinforced galvanized mast      50#  
**M-20**      2" O.D. x 20 foot galvanized mast      55#  
**M-20R**      2" O.D. x 20 foot reinforced galvanized mast      70#  
**CM-20**      2" O.D. x 20 foot chromolly mast      140#

**3/4" x 27"**      Anchor bolt with 2 nuts      5#  
**1" x 27"**      Anchor bolt with 2 nuts      10#  
**1-1/8" x 27"**      Anchor bolt with 2 nuts      12#  
**RP-3**      Rotator plate for 10" section      5#  
**RP-4**      Rotator plate for 12.5" section      7#  
**RP-5**      Rotator plate for 15" section      9#

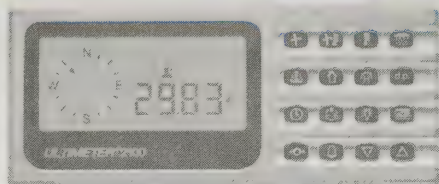
## Tower Accessories

	TX-438	TX-455	TX-472	TX-472MDP	TX-489	TX-489MDPL	HDX-538	HDX-555	HDX-572	HDX-572MDPL	HDX-589MDPL	TMM-433SS	TMM-433HD	TMM-541SS	HRO Price
<b>Masts</b>															
M-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$60.95
M-8												S	S	S	-
M-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$99.95
M-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$159.95
M-20	0	0	0	0	0	0	0	0	0	0	0				\$199.95
M-15R	0	0	0	0	0	0	0	0	0	0	0				\$229.95
M-20R	0	0	0	0	0	0	0	0	0	0	0				\$299.95
CM-20	0	0	0	0	0	0	0	0	0	0	0				CALL
<b>Raising Fixture</b>															
TRX-80	0	0					0	0				0	0	0	\$599.95
TRX-80HD			0	0	0	0			0	0	0				\$799.95
<b>Service Platform</b>															
HDP			0	0	0	0			0	0	0				\$1,699.95
<b>Coax Standoff Arms</b>															
CX-2	0						0								\$80.95
CX-3		0						0							\$99.95
CX-4			0	0					0	0		0	0		\$169.95
CX-5				0	0						0			0	\$199.95
<b>Motor Drives</b>															
MD-75	0	0					0	0				0	0	0	\$1,499.95
MDP-750		0	0	S				0					0	0	\$1,929.95
MDPL-1000			0		0	S			0	S					\$2,999.92
<b>Remote Control</b>															
RMC-1000		0	0	0	0	0		0	0	0	0		0	0	\$1,449.95
MCL-100		0	0	R	0	S		0	0	S	S		0	0	\$649.95
<b>Miscellaneous</b>															
3/4" X 27 bolts	S														\$42.95
1" X 27" bolts		S			S	S	S		S	S	S				\$51.95
1-1/8" X 27" bolts			S	S				S			S				\$68.95
RP-3												S		S	\$52.95
RP-4	S	S	S	S	S	S							S		\$63.95
RP-5							S	S	S	S	S				\$70.95
MRF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$399.95
TB-2US	0	0	0	0	0	0	0	0	0	0	0		0		\$149.95
IV-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$60.95



# WEATHER STATIONS

## Weather Stations



**Ultimeter 2100**  
HRO Price \$399.95

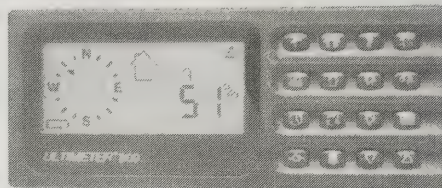
*Tracking more than  
100 weather values*

The Ultimeter 2100 features a stunning platinum-tone housing with brilliant blue display backlighting. To enhance the user interface still further, an illuminated keypad provides exceptional visibility in darkness or low-light conditions. The unit utilizes Peet Bros. patented and proven weather sensor technology, including a unique all-digital wind sensor. Its microprocessor is 8 times faster and has 4 times the memory of their earlier weather stations. Major features include:

- Barometric pressure and numeric pressure change over a 3 hour period plus preset barometric Storm Alert, Wind Speed, Wind Direction, Outdoor Temperature, Indoor Temperature, Wind Chill, Time, Date and (with optional sensors) Indoor Humidity, Dew Point and Rainfall.
- Two versatile 4-mode serial ports can accept remote commands, making it easy to communicate with external devices to transmit data or collect it remotely by phone, modem, or radio link. The 5 minute packet mode is perfect for economical radio "beacon" transmission. The 2100 comes "APRS-Ready," requiring only direct cable connection to a TNC (cable not provided).
- The second serial data port is in the 2100's sensor junction box, delivering greater flexibility in the location and connection of the Weather Picture, PC Weather Data Logger or other peripheral weather accessory.
- An exclusive Triple-Bank Memory System stores highest and lowest readings – today's, yesterday's and long term – and the date and time that every high and low occurred.
- Each long term high and low can be reset individually or you can use a Master Reset to clear all long term memories simultaneously.
- The system includes built-in static electricity discharge protection for all outdoor sensors. Also includes a 3 prong grounded AC adapter.
- Features a unique Rain Rate Alarm serving as a flash flood alert. It is compatible with all of our optional rain gauge models.
- The 2100 has a full array of adjustable alarms and an optional electrical external alarm output. A predictive battery test circuit warns when the battery is getting weak.
- Optional sensors include humidity sensors and rain gauges.

## WeatherText™ Special

WeatherText™ is an RS-232 serial data output mode in which the instrument puts out one human-readable text Weather Report each minute. Viewable on a PC monitor using terminal software such as HyperTerminal or may be transmitted as a data packet. For a limited time every 800/2100 Ultimeter Weather Station purchased will include the WeatherText™ Tools Data Logger key, including software and PC interface cable. \$69 retail value

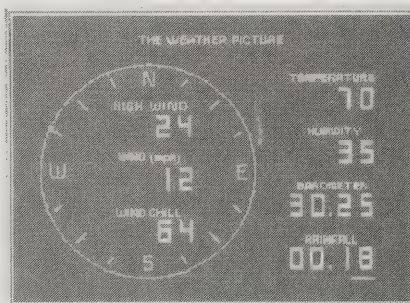


**Ultimeter 800**  
HRO Price \$279.95

The Ultimeter 800 has nearly all the features of the Ultimeter 2000 except the barometer. It has wind speed, wind direction, outdoor temperature, indoor temperature, wind chill temperature, time, date, automatic leap year adjustment and automatic scan mode as standard functions. With optional sensors, rain, outdoor humidity, indoor humidity and dew point reading are available. It automatically stores today's and yesterday's highs, lows and total rain fall. It also stores long term highs and lows. Alarms are provided for high wind, high and low outdoor temperature, high and low indoor temperature. The serial port has three output modes.

**Ultimeter 100**  
HRO Price \$199.95

The Ultimeter 100 automatically stores today's and yesterday's highs, lows and total rainfall so you can compare the readings. Also stores long term high, low and rain information since it was last reset. Has a 3-mode serial port for interfacing telephone, modem or radio reporting.



**Weather Picture**  
HRO Price \$389.95  
(aluminum version)

The Weather Picture receives data from an Ultimeter and continuously displays your pre-selected data. The 8 inch compass rose and big 0.8 inch illuminated red numerals are clearly visible day or night. View even from across the room.

## Catalog Prices

**HRO**  
discount prices  
shown are  
current as of  
April 1, 2007,  
when this  
catalog was  
assembled.

Prices change  
both up and down.  
Please be sure to  
call one of our  
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prices.

We at HRO strive  
to offer the most  
competitive prices  
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# General Information for Our Valued Customers

## Easy Ordering

Six toll-free 800 numbers are available for orders. They are located throughout the United States. This provides personnel at one location or another to answer your questions for extended hours Monday through Saturday. You will find the same low prices at all locations and, thanks to computers, we have the stock levels of all locations available to each salesperson for estimates of availability and delivery.

24 Hour "On-Line" Ordering is now available on the INTERNET! URL is <http://www.hamradio.com>

Shipments are made from any of our 12 locations that has the particular items you need in stock. In most cases, the shipment will be made from the location nearest you (if stock is available). HRO is trying to provide the quickest shipments in the industry using these methods.

California customers can now order using a toll-free number. The number is 1-800-854-6046. It is no longer necessary for California customers to pay for the phone call.

## Sales Tax

State and local laws require us to collect and remit state sales / use tax on orders shipped from any of our 12 locations INTO Arizona, California, Colorado, Georgia, or Virginia.

You will find that this small extra charge will be more than overcome by the convenience of the largest ham radio inventories in the United States. You will also find courteous and knowledgeable salespeople to assist you. We think you will find HRO to be the company you want backing you when it comes to dealing with any problems you might have with manufacturers or shipping companies.

## Phone Orders

To place a phone order using a credit card, please have the following information available if you are a first-time caller or have not made a recent purchase from HRO. We will ask for your call sign (if any), credit card number, expiration date, your home telephone number, and possibly the name, address, and telephone number of the bank listed on your charge card statement.

## Payment

We accept Visa, MasterCard, American Express, and Discover Card. Personal checks are also accepted; however, processing time will delay shipment by some 10 days. When using a credit card, please have the card in front of you since we will need all the information, including the name of the issuing bank. If the card holder's BILLING address differs from the shipping address, please be sure to specify both addresses and telephone numbers. For your protection, we thoroughly investigate the validity of all credit card purchases.

## COD Orders

COD payments must be made in cashiers check or money order at the time of delivery. There is a small fee for COD shipments.

## Commercial Sales Purchase Orders

Written purchase orders will be accepted from city, state, and federal agencies, and, with prior approval of credit, from commercial organizations. HRO quotes, in most cases, prices that require payment on receipt of merchandise. You may find a surcharge for credit terms applied to your pricing. Please indicate that you require terms when calling for price quotes.

## Delivery

Free UPS Ground Transportation in the continental US on most items over \$100.

All Alaska and Hawaii shipments via UPS must be shipped by Blue Label (2nd Day Air) or Red Label (Overnight). Please ask for charges.

In a Hurry? If necessary to expedite shipments, UPS has Red Label (overnight), Blue Label (2nd-day) and Orange Label (3 day) services available at an extra cost. Please request charges for these services.

Foreign Deliveries We ship world-wide. Contact our stores, preferably by fax, with your needs. We can give you quotes and details for placing your foreign order. Payment methods include wire transfer direct to our bank as well as payment by VISA/ MC charge cards or check drawn in U.S. Funds from a U.S. Bank. Shipments are made (depending on size) by UPS, FED EX, Emery, DHL, or international air mail. Some orders to some foreign countries cannot be insured to the full value.

Truck Delivery On day of delivery, if by truck, please be sure to have enough help, and / or proper equipment on hand for unloading merchandise. Truck drivers are NOT required to provide assistance. If you are not experienced at handling large, awkward items such as towers, antennas or amplifiers, please ask properly trained people to assist you.

Canadian Orders can now be shipped via UPS. These costs will be added to your invoice.

## Damaged Items

UPS If the item is obviously damaged, note this with the driver and refuse shipment. This item will be returned to HRO and another will be sent at no additional charge. If hidden damage is noted, contact UPS as soon as possible. They will arrange pickup. Once the item is received by HRO, a replacement will be sent.

TRUCK If there is damage or the shipment is short, it is the customer's responsibility to file the claim with the trucking company. At the time of receipt of item, it is recommended that you have the driver write "damaged" or indicate shortage on the bill of lading he gives to you. Be sure to have the same notation as well as drivers signature on his copy also.

MAIL It is the customer's responsibility to file all loss or damage claims with the postal department.

## Prices

Many prices shown are suggested list price. In most cases we offer large discounts. Equipment manufacturers constantly change prices, offer specials or react to the Dollar / Yen exchange rates. Simply call one of our 800 numbers and our staff will be happy to quote you the current selling price of the item you are interested in. Prices are subject to change without notice or obligation to the customer. Sorry, we cannot honor typos in this catalog.

## Software

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

## Lost Items

When your order is delivered, please carefully count items and if anything is missing, notify HRO at once.

Occasionally, cartons shipped at the same time will arrive at their destination two or three days apart.

If you notify HRO within 10 days, we will replace lost or damaged items after completion of proper documentation and acceptance by the shipping agency.

## New Equipment Returns

Products are not sold for evaluation. Under some circumstances (at the discretion of HRO) and with prior approval of the store of purchase, HRO will accept an item for return. Under most circumstances a 15% restocking fee and all freight charges will be assessed.

Your means of refund for returns will be the same as that used for your original payment except for cash, which will be refunded by check. HRO will pay from its corporate offices. It can take up to two weeks.

Defective merchandise may be returned within 10 days of the original purchase for exchange. Original receipt must accompany the return. Items returned for warranty replacement consideration must also include a completed, signed, "Warranty Replacement Certification Form." Customers who return equipment for replacement consideration without this form completed and signed cannot be considered for any possible warranty replacement, only warranty repair. No exceptions. Contact your salesman for details.

## Manufacturer's New Equipment Warranties

Ham Radio Outlet supports all manufacturers' warranties. Actual warranty terms are included within the shipping container of most items. If needed, you may request from any of our locations a free copy of the manufacturer's written terms for any warranted product. Please request by model number and indicate the page in this catalog that represents the product.

Ham Radio Outlet will in many cases provide in-store repairs; please contact the store of purchase for information. It will be necessary to provide us with the invoice number and purchase date, as most manufacturers need this information to process under their FREE warranty repair terms.

## New Equipment Warranty Returns

When returning equipment for repair, please pack the item in original packing material or something similar to provide adequate protection during the shipping process. Note on box: "ATTENTION SERVICE." Include a copy of your purchase invoice, and a complete and detailed description of the problems. Without the invoice or a complete description, delays will be experienced in providing the proper service and returning the item to you. Be sure to insure the package for its replacement cost.

HRO will repair or replace the defective item at our option. If the item is found to be defective under the terms of the manufacturer's warranty, no charge will be made for service or return shipping within continental USA. It is the customer's responsibility to ship all defective items to the service center for warranty repair.

## Problems

HRO prides itself in its ability to service the customer. If there is a problem please contact the manager of the store from which you purchased the merchandise. If for some reason, your problem cannot be corrected by that store manager, please feel free to call Ham Radio Outlet Corporate Headquarters at (925) 831-1771 and explain the situation. At this point our national sales staff will see that your problem is corrected.

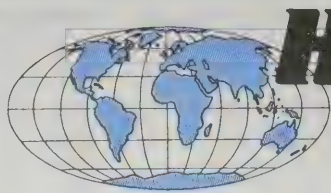
Thank You for choosing



The World's Largest Ham Outlet



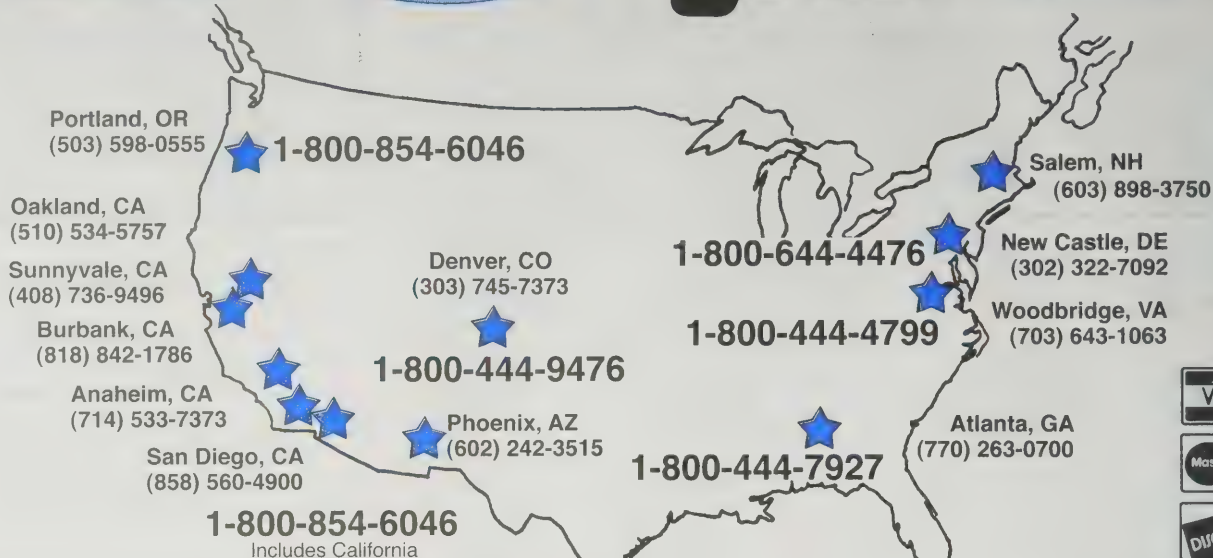
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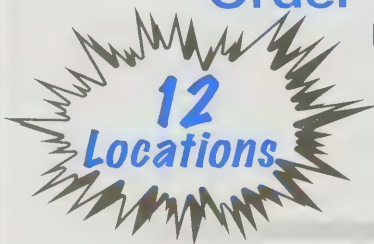
## Order Toll-Free From a Location Near You

If your closest 800 number is busy, please call one of our other numbers.

Phone Hours: 9:30 AM to 5:30 PM Monday - Saturday

Secure 24-Hour Ordering: <http://www.hamradio.com>

24-Hour FAX Order Lines: At All 12 Locations



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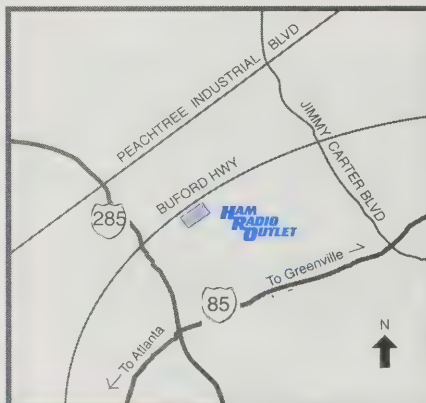
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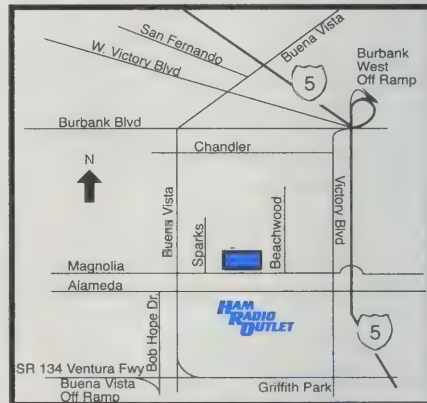
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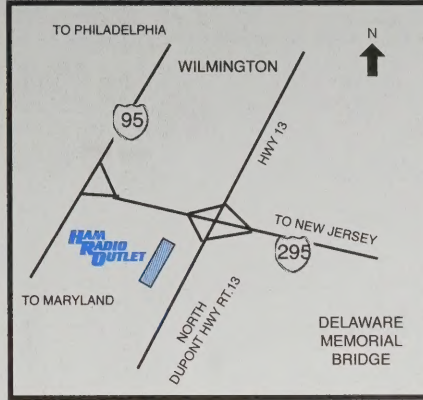
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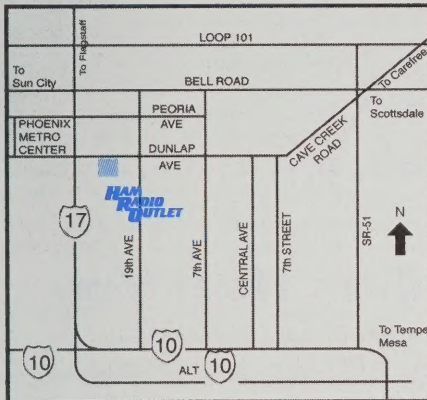
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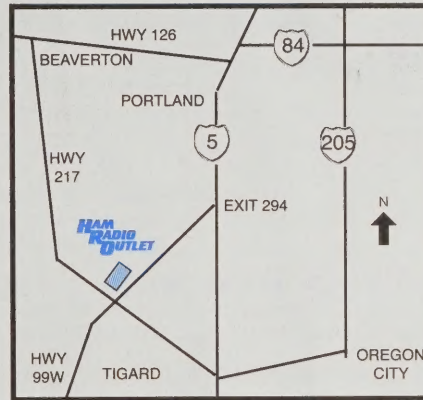
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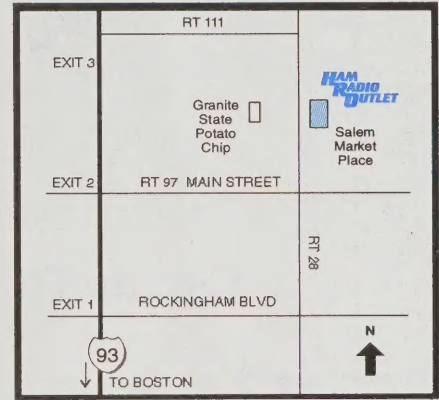
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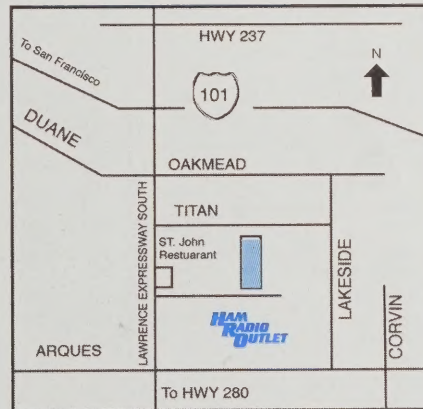
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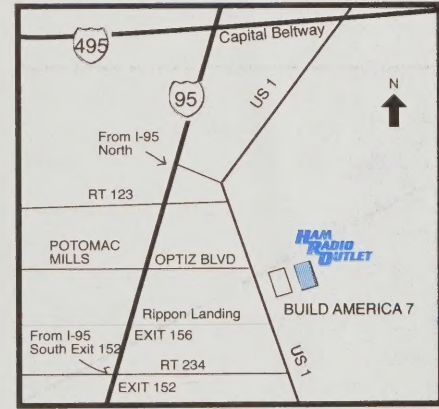
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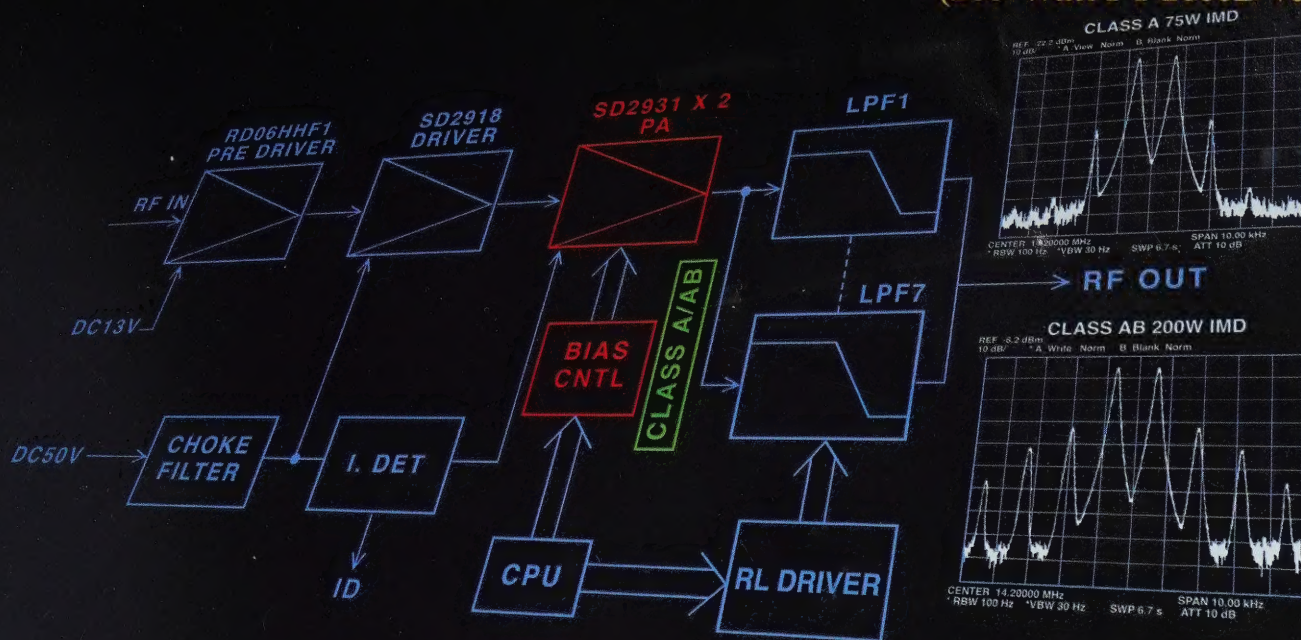
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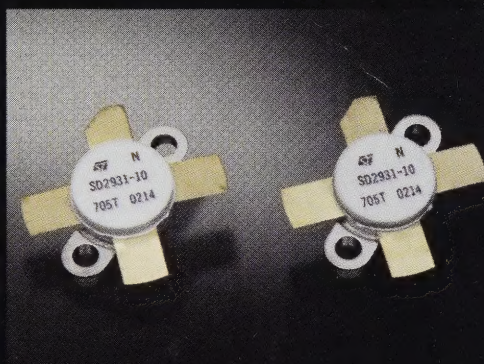
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